

# How To Build IT



One-Piece Desk



594  
A  
**FAWCETT**  
BOOK

75¢

End Table

## FAMILY PROJECTS FOR THE HANDY MAN

Build an Extra Room

Boat and Luggage Carrier for Your Car

Kitchen and Laundry Cabinets

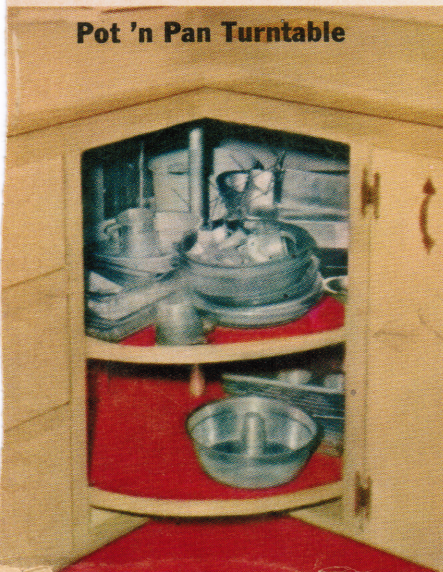
Indoor and Outdoor Furniture

Toys for Your Children



Stereo Coffee Table

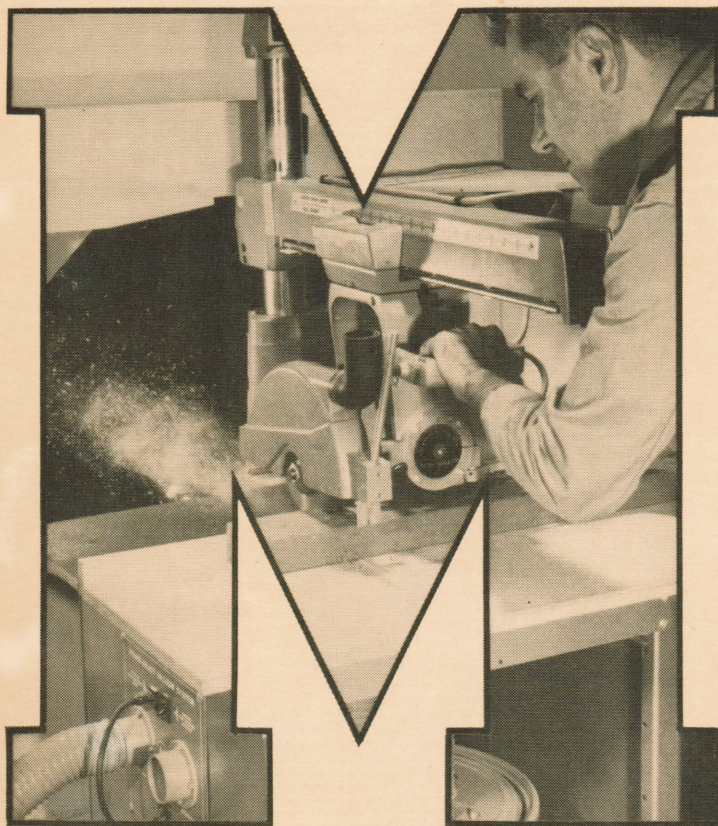
Pot 'n Pan Turntable



Child's Automobile

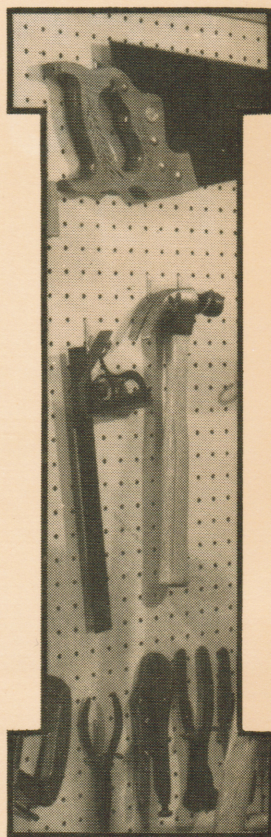


# GET THE MAGAZINE THAT STANDS OUT...



## MECHANIX ILLUSTRATED

THE HOW-TO-DO MAGAZINE



**MECHANIX ILLUSTRATED** stands out as the *best* how-to-do magazine for just one reason—outstanding content. MI's how-to-do articles include easy-to-follow instructions and step-by-step photos and diagrams. They cover everything from making furniture to building a boat or repairing your car. To make sure you get every issue of MI, subscribe now. For a one-year subscription, send \$3 to the MI Subscription Dept., Fawcett Building, Greenwich, Conn. 06830. Do it today!



Clip coupon — and take your first big step to real success! I.C.S., Scranton, Penna. 18515

Accredited Member,  
National Home Study Council

# INTERNATIONAL CORRESPONDENCE SCHOOLS I.C.S. 75th YEAR

Dept. 1047, Scranton, Penna. 18515

(In Hawaii: P. O. Box 418, Honolulu. In Canada: I. C. S. Canadian, Ltd., Montreal.)

Without cost or obligation, rush me "HOW to SUCCEED," the opportunity booklet about the field I have indicated below, and a sample lesson.

New! Special Package for Women!

Name of the course in which you are interested \_\_\_\_\_

Mr. \_\_\_\_\_ Age \_\_\_\_\_ Address \_\_\_\_\_

Miss \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_ Working Hours \_\_\_\_\_ A.M. to \_\_\_\_\_ P.M.

City \_\_\_\_\_ Occupation \_\_\_\_\_ Employed by \_\_\_\_\_

**Low rates to members of U. S. Armed Forces!**  
Special training programs for industry

## Cast your ballot for a successful future!

# 253 I.C.S. COURSES



I.C.S. is the oldest, largest school of its kind. Over 200 courses for men and women. High school, business, secretarial, interior decorating, engineering. One for you. Direct, job-related. Bedrock facts and theory plus practical applica-

tion. You learn from experts. Diploma to graduates.

Clip and mail the coupon now. You'll receive, absolutely FREE, 3 valuable booklets that have helped thousands. But don't delay. Cast your "ballot" for future success!



**ACCOUNTING**  
Accounting for Business  
Programmers  
Cost Accounting  
C.P.A. Review  
Estate & Trust Accounting  
Executive Accounting  
Federal Tax  
General Accounting  
Industrial Accounting  
Legal Accounting  
Office Accounting  
Personal Income Tax &  
Social Security  
Practical Accounting  
Public Accounting  
Small Business Accounting  
Starting & Managing a  
Small Bookkeeping  
Service

**ARCHITECTURE  
AND BUILDING**  
Architectural Drawing &  
Designing  
Architectural  
Building Contractor  
Building Estimator  
Building Inspector  
Building Maintenance  
Carpenter-Building  
Carpentry & Millwork  
House Planning & Interior  
Design  
Mason  
Painting Contractor  
Reading Arch. Blueprints  
Review in Arch. Design &  
Practice  
Review of Mech. Systems  
in Buildings

**ART**  
Amateur Artist  
Commercial Art  
Commercial Cartooning  
Illustrating  
Interior Decorating  
Oil Painting for Pleasure  
Show Card & Sign Prod.  
Show Card Writing  
Sign Painting & Designing  
Sketching & Painting

**AUTOMOTIVE**  
Automatic Transmission  
Specialist  
Automobile Body Rebuilding  
& Refinishing  
Automobile Electrical Tech.  
Automobile Engine Tune-Up  
Automobile Technician  
Automotive Mechanic

Diesel-Gas Motor Vehicle  
Engines

**BUSINESS**  
Advertising  
Basic Inventory Control  
Business Administration  
Business Management &  
Marketing  
Business Management &  
Production  
COBOL Programming  
Condensed Business  
Practice  
Industrial Psychology  
Managing a Small Store  
Marketing  
Modern Executive  
Management  
Office Management  
Programming for Digital  
Computers  
Programming the IBM 1401  
Computer  
Purchasing Agent  
Retail Business  
Management  
Statistics and Finance  
Systems and Procedures  
Analysis

**CHEMICAL**  
Analytical Chemistry  
Chemical Engineering  
Chemical Engineering Unit  
Operations  
Chemical Laboratory Tech.  
Chemical Process Control  
Technician  
Chemical Process Operator  
Elements of Nuclear Energy  
General Chemistry  
Instrumental Laboratory  
Analysis

**CIVIL  
ENGINEERING**  
Civil Engineering  
Construction Engineering  
Highway Engineering  
Principles of Surveying  
Reading Highway Blueprints  
Reading Structural  
Blueprints  
Sanitary Engineering  
Sewage Plant Operator  
Structural Engineering  
Surveying and Mapping  
Water Works Operator

**DRAFTING**  
Aircraft Drafting  
Architectural Drafting  
Electrical Drafting

Electrical Engineering  
Drafting  
Electronic Drafting  
Introductory Mechanical  
Drafting  
Mechanical Drafting  
Pressure-Vessel and Tank  
Print Reading  
Sheet Metal Layout for  
Air Conditioning  
Structural Drafting  
**ELECTRICAL**  
Electric Motor Repairman  
Electrical Appliance  
Servicing  
Electrical Contractor  
Electrical Engineering  
(Power option or  
Electronic option)  
Electrical Engineering Tech.  
Electrical Instrument Tech.  
Industrial Electrical Tech.  
Industrial Telemetering  
Power Line Design and  
Construction  
Power Plant Operator  
(Hydro or Steam Option)  
Practical Electrician  
Practical Lineman  
Reading Electrical  
Blueprints

**ENGINEERING  
(Professional)**  
Chemical Civil  
Electrical Mechanical  
Industrial Management for  
Engineers

**ENGLISH AND  
WRITING**  
Better Business Writing  
Introductory Technical  
Writing  
Modern Letter Writing  
Practical English  
Short Story Writing

**HIGH SCHOOL**  
High School Business  
High School College Prep.  
(Arts)  
High School College Prep.  
(Engineering & Science)  
High School General  
High School Mathematics  
High School Secretarial  
High School Vocational

**LANGUAGES**  
(Edited by Berlitz)  
French  
German

Italian  
Spanish  
**LEADERSHIP**  
Basic Supervision  
Industrial Foremanship  
Industrial Supervision  
Personality Development  
Personnel-Labor Relations  
Supervision

**MATHEMATICS**  
Advanced Mathematics  
Mathematics and Mechanics  
for Engineering  
Mathematics and Physics  
for Engineering  
Mathematics & Physics for  
Technicians  
Modern Elementary  
Statistics

**MECHANICAL**  
Industrial Engineering  
Industrial Instrumentation  
Machine Design  
Mechanical Engineering  
Quality Control  
Safety Engineering Tech.  
Tool Design  
Value Analysis

**PETROLEUM**  
Natural Gas Production &  
Transmission  
Oil Field Technology  
Petroleum Production  
Petroleum Production  
Engineering  
Petroleum Refinery Oper.  
Pipeline Engineering

**PLASTICS**  
Plastics Technician

**PLUMBING,  
HEATING, AIR  
CONDITIONING**  
Air Conditioning  
Air Conditioning Maint.  
Domestic Heating with  
Oil & Gas  
Domestic Refrigeration  
Gas Fitting  
Heating  
Heating & Air Conditioning  
with Drawing

Plumbing  
Plumbing & Heating  
Plumbing & Heating  
Contractor  
Plumbing & Heating  
Estimator  
Practical Plumbing  
Refrigeration

Refrigeration & Air  
Conditioning  
Steam Fitting  
**PULP AND PAPER**  
Paper Machine Operator  
Paper Making  
Pulp Making  
Pulp & Paper Engineering  
Pulp & Paper Making  
**SALESMANSHIP**  
Creative Salesmanship  
Real Estate Salesmanship  
Sales Management  
Salesmanship  
Salesmanship & Sales  
Management

**SECRETARIAL**  
Clerk-Typist  
Commercial  
Legal Secretary  
Medical Secretary  
Professional Secretary  
Shorthand  
Stenographic  
Typewriting

**SHOP PRACTICE**  
Drill Operator  
Foundry Practice  
Industrial Metallurgy  
Lathe Operator  
Machine Shop Inspection  
Machine Shop Practice  
Machine Shop Practice &  
Toolmaking  
Mechanical Engineering  
Technology  
Milling Machine Operator  
Patternmaking  
Practical Millwrighting  
Reading Shop Prints  
Rigging  
Tool Engineering Techn'gy  
Tool Grinder  
Toolmaking  
Turret Lathe Operator  
Welding Engineering Tech.  
Welding Processes

**STEAM AND  
DIESEL POWER**  
Boiler Inspector  
Industrial Building  
Engineer  
Power Plant Engineering  
Stationary Diesel Engines  
Stationary Fireman  
Stationary Steam Eng.

**TEXTILES**  
Carding  
Carding and Spinning

Cotton Manufacturing  
Dyeing & Finishing  
Loom Fixing  
Spinning  
Textile Designing  
Textile Technology  
Textile Mill Supervisor  
Warping and Weaving  
Wool Manufacturing

**TRAFFIC**  
Motor Traffic Management  
Railway Rate Clerk  
Traffic Management

**TV-RADIO-  
ELECTRONICS**  
Communications Techn'gy  
Electronic Fundamentals  
Electronic Fundamentals  
(Programed)  
Electronic Fundamentals  
with Electr. Equip. Tr'n'g  
Electronic Instrumentation  
& Servo Fundamentals  
Electronic Principles for  
Automation  
Electronics and Applied  
Calculus

Electronics Technician  
First Class Radiotelephone  
License  
Fundamentals of Electronic  
Computers  
General Electronics  
General Electronics with  
Electronic Equip. Tr'n'g  
Hi-Fi Stereo and Sound  
Systems Servicing  
Industrial Electronics  
Industrial Electronics  
Engineering  
Industrial Electronics  
Engineering Technician  
Practical Radio-TV Eng'r'g  
Practical Telephony  
Principles of Radio-  
Electronic Telemetry  
Principles of Semiconduc-  
tor-Transistor Circuits  
Radio Servicing with Radio  
Equipment Training  
Radio & TV Servicing  
Radio & TV Servicing with  
Radio Equip. Tr'n'g  
Second Class Radiotele-  
phone License  
Sound Systems Specialist  
Telephony, Electronics and  
Radio Communications  
TV Receiver Servicing  
TV Technician



# HOW TO BUILD IT

A FAWCETT BOOK • NUMBER 594  
LARRY EISINGER • EDITOR-IN-CHIEF  
GEORGE TILTON • MANAGING EDITOR  
SILVIO LEMBO • ART EDITOR  
NICK CARLUCCI • ASSOC. ART EDITOR

W. H. Fawcett, Jr. . . . . President  
Roger Fawcett . . . . . General Manager  
Donald P. Hanson . . . Assistant General Manager  
Gordon Fawcett . . . . . Secretary-Treasurer  
Roscoe Fawcett . . . . . Circulation Director  
Ralph Daigh . . . . . Vice President  
George H. Carl . . . . . Production Director  
Mortimer Berkowitz, Jr. . . . Advertising Director  
Al Allard . . . . . Art Director  
Ralph Mattison . . . . . Associate Art Director  
Annette C. Packer . . . . . Production Manager

JOSEPH PIAZZA . . . . . EDITOR

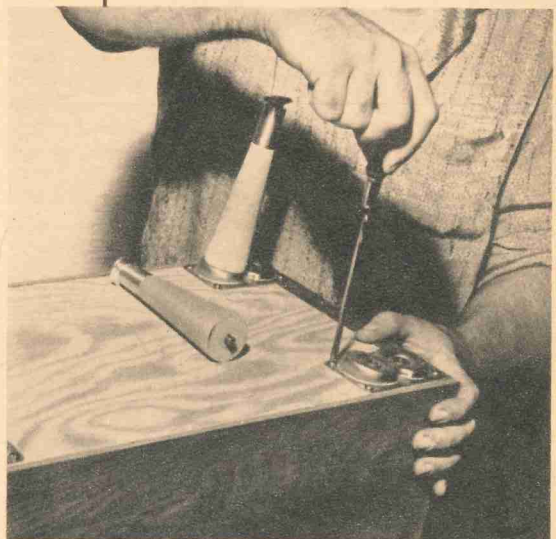
## STAFF ARTISTS

HAROLD E. PRICE . . . . ASSISTANT ART EDITOR  
Mike Gaynor • John Selvaggio  
Bob Vatter • Richard Rhodes  
Bernie Clorman • Alex Santiago  
Herbert Jonas

Toni Wechsler . . . . . Production Editor  
Mary Anne Morecock . Assistant Production Editor

HOW TO BUILD IT, Fawcett Book 594, is published by Fawcett Publications, Inc., Greenwich, Conn. Editorial and Advertising Offices: 67 West 44th Street, New York, New York 10036. General Offices: Fawcett Building, Greenwich, Connecticut 06830. Printed in U.S.A. Copyright © 1964, 1965 by Fawcett Publications, Inc.

Fawcett Publications, Inc., is a member of American Book Publishers Council, Inc.





# This Free sample lesson can start you on a high-pay career as **ACCOUNTANT, AUDITOR or CPA**

*You can learn in your spare time at home*

**T**HE demand for trained Accountants far exceeds the number available. Salaries keep going higher, promotions come faster. Why remain in a dull job with insufficient pay when you can qualify easily — *in your spare time* — for the big rewards which are being offered today by the Accounting profession?

To prove this to yourself, send for the interesting sample lesson which demonstrates the remarkable LaSalle method of home training. This lesson is yours free of cost or obligation. It will show you how you are guided step by step through actual Accounting work, how you learn by doing, how thoroughly you are prepared for every Accounting task you will be called upon to handle in the business world.

## **No previous experience required**

LaSalle's distinguished faculty of expert Accountants and CPA instructors starts you right at the beginning, then supervises, corrects and grades your work all the way — right up to training you to take a Certified Public Accountant examination, if this is your eventual goal.

You train in your spare time — *at your own pace* — without losing a single day from your present job. The cost of instruction is remarkably low.

## **Which of today's many Accounting positions do you want?**

Regardless of your present job — if you want to become a professional Accountant, Controller, Auditor, Income Tax Specialist, Government Accountant, or Public Accountant, LaSalle has the exact plan to prepare you rapidly and inexpensively.

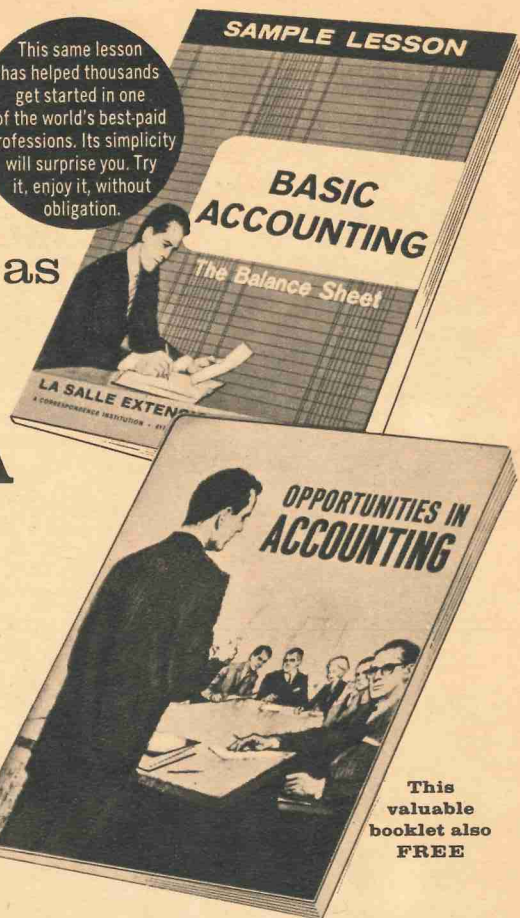
For over half a century, LaSalle has been a world leader in business education. It has provided training at home to more than 1,000,000 ambitious men and women. That is why a LaSalle diploma in Accounting is a credential respected by employers. See for yourself. Mail the coupon now for your free sample lesson and a copy of the booklet "Opportunities in Accounting."

## **LA SALLE EXTENSION UNIVERSITY**

*A Correspondence Institution*

417 South Dearborn, Chicago, Illinois 60605

This same lesson has helped thousands get started in one of the world's best-paid professions. Its simplicity will surprise you. Try it, enjoy it, without obligation.



**LaSalle graduates report up to 56% increase in pay within one year**



My income has increased over \$100 a month since I began taking your course. I recommend it highly to anyone."

—W. G. Hensley, Memphis, Tenn.

"My salary has more than doubled since enrolling with LaSalle and due to my fine training, my salary is still growing."—William T. Black, Canoga Park, Calif.

"As a direct result of my LaSalle studies, my salary has increased 400% since I first began my LaSalle success building program."

—Rudolf Urbatis, Port Chester, N. Y.

## **LA SALLE EXTENSION UNIVERSITY**

*A Correspondence Institution*

417 South Dearborn, Dept. 43-067, Chicago, Illinois 60605

Please send me, free of cost or obligation, your sample lesson and illustrated booklet "Opportunities in Accounting."

Name.....Age.....

Address.....County.....

City.....State.....Zone or Zip No.....

Occupation.....Working Hours.....A.M.....P.M.

108 Canadian residents, write: LaSalle, Box 1001, Montreal 3, Quebec



# CONTENTS

A Wall With Hidden Doors . . . . .	5	Miniature Bowling Alley . . . . .	64
A Chair That Becomes a Ladder . . . . .	10	The Bucking Bronco . . . . .	66
Luggage Carrier . . . . .	14	Child's Automobile . . . . .	68
Stereo Coffee Table . . . . .	16	Laughing Clowns . . . . .	76
Laundry Cabinet . . . . .	20	Swamp Buggy . . . . .	78
Pot 'n Pan Turntable . . . . .	22	Flying Top . . . . .	80
Build This Weathervane Cupola . . . . .	24	Whirling Saucer . . . . .	81
Multi-Print Easel . . . . .	27	Junior Wheelbarrow . . . . .	82
Need an Extra Room? . . . . .	30	Colonial Spoon Rack . . . . .	84
Decorator's Tile Table . . . . .	34	Battery-Operated Clock . . . . .	86
One-Piece Desk . . . . .	38	Initial Book Ends . . . . .	90
Slat Bench . . . . .	40	Lathe-Turned Flower Vase . . . . .	92
Cedar Closet . . . . .	43	Sun-Powered Clothes Dryer . . . . .	94
Car-Top Boat Loader . . . . .	44	For the Birds . . . . .	96
Wrought Iron for the Home Blacksmith . . . . .	47	Trestle-Type Picnic Table . . . . .	97
Teen-Age Vanity Table . . . . .	50	Redwood Planter Box . . . . .	100
Totable Wine Cellar . . . . .	54	Rolling TV Table . . . . .	104
End Table Sewing Box . . . . .	56	End Table . . . . .	106
Toy Storage . . . . .	62	Customize Your Door . . . . .	110







THE WALL at left has two full-sized doors in it besides a smaller door closing off the TV cabinet. The wall is made of plywood squares with the heavy grain placed in alternate position. Notice the open TV door, above.

# A Wall With Hidden Doors

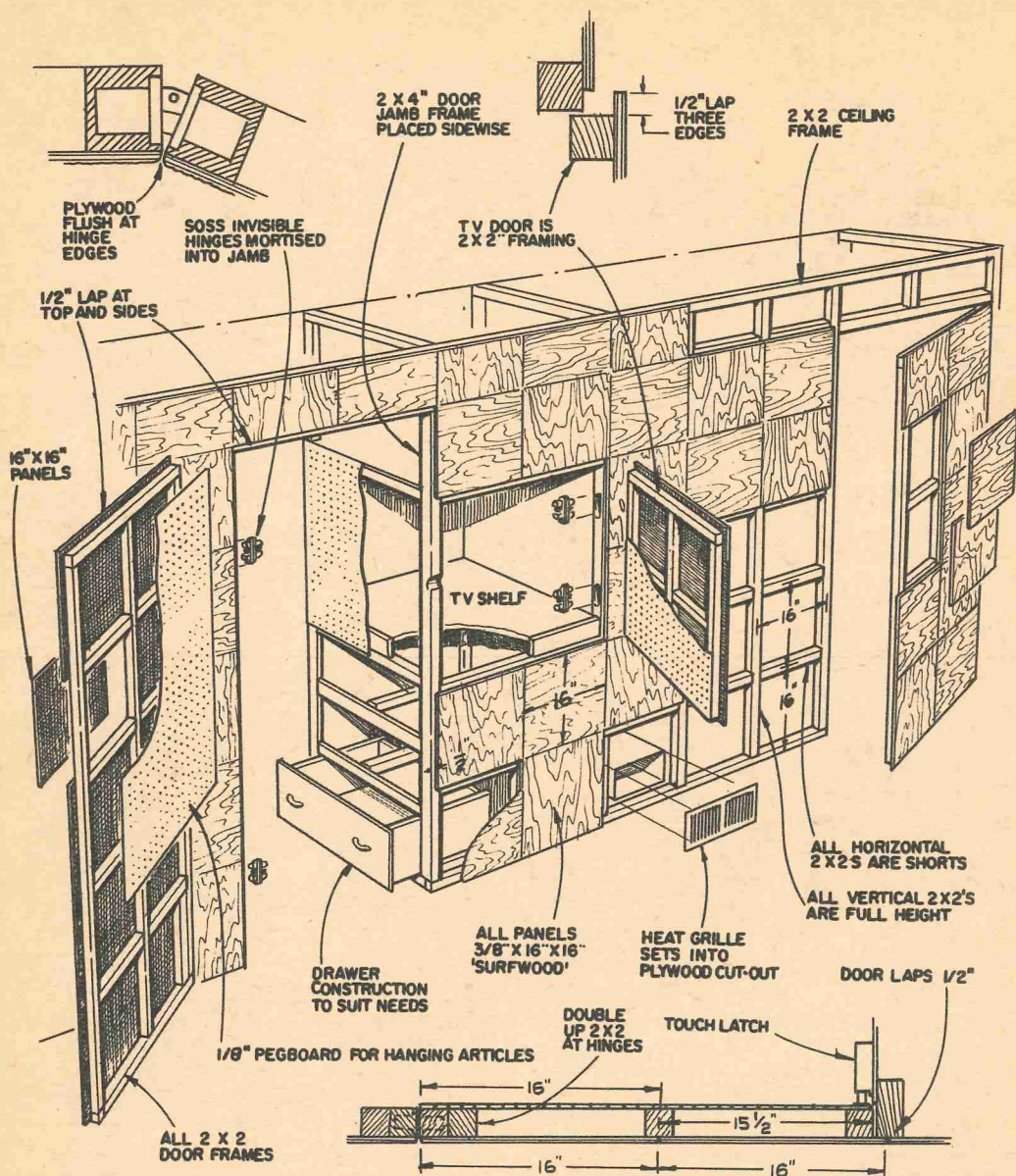
By Paul Corey

**I**F YOU CONSIDER building a partition in your home, and you plan to have doors in it, how about making those doors secret and hidden? Even an ordinary room will become exciting and mysterious when you know that an innocent looking wall may have several full-sized concealed doors. Also, such a

wall has another advantage. When all the doors are closed it becomes a solid wall, not a space broken up by door frames, door panels and knobs.

It's a simple trick to get such a wall. Use 16x16-inch squares of patterned wallboard, placing them so that the direction of the pattern alternates. This





dimension is used because the standard door openings are modules of 16 inches. Invisible hinges and "Tutch Latches" will complete the secrecy of your hidden doors.

Seaswirl plywood (U.S. Plywood Corp.) was used to build the wall with hidden doors shown here. The 4x8-foot sheets were cut into 16x16-inch squares. The pronounced pattern in the plywood increased the sharpness of the horizon-

tal and vertical lines in the wall. That made the hiding of the doors easier.

Each square of plywood must be supported on all four edges and the framing must be planned accordingly. You can use 2x4's throughout, but 2x2's, or 2x4's ripped down the center, are adequate.

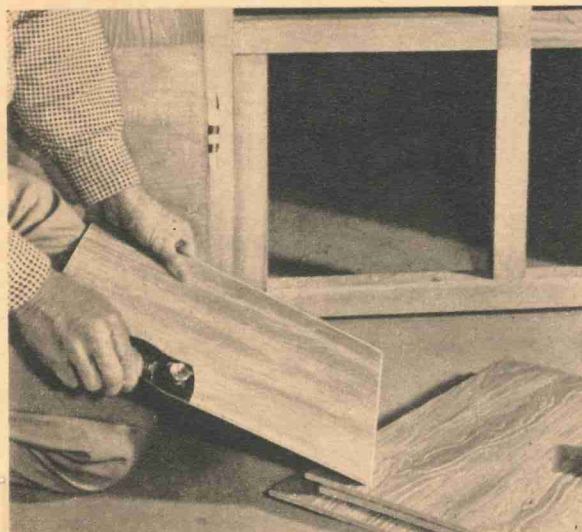
Floor sills are continuous, except where there are door openings. Fasten the sill to the floor with regular nails. If you have a cement floor, use steel con-





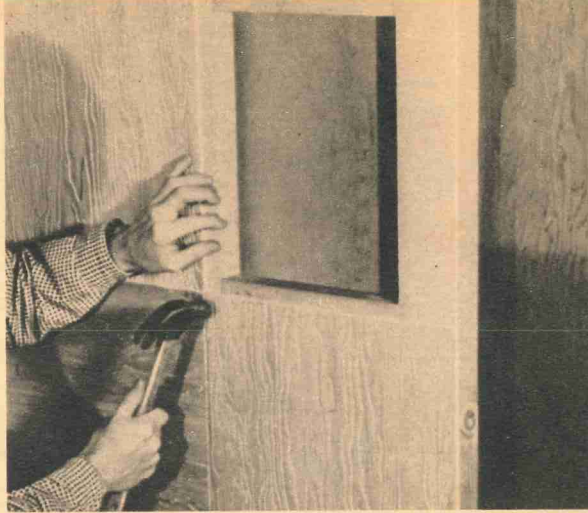
**DOORS ARE FRAMED** in with 2x4's. All the additional uprights are 16 inches on center, measured from the edge of the first 2x4.

**EASE THE EDGES** of all squares of plywood so that the lines will be pronounced. Hang door frames before adding squares to wall.



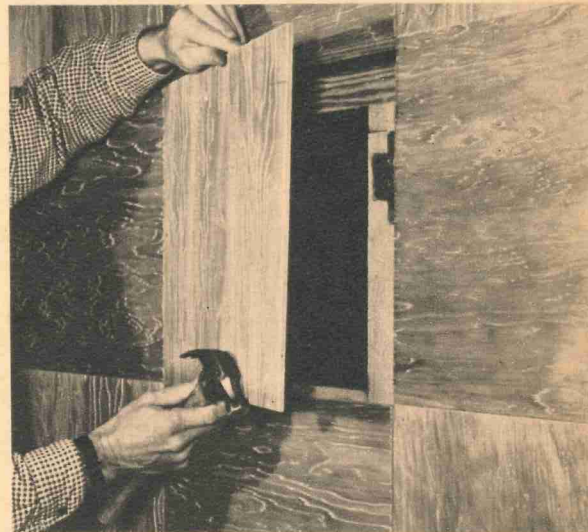
crete nails or gun-driven steel studs.

Studding, either 2x2's or 2x4's, must be carefully positioned. You can begin measuring for the first stud either at the end of the wall, or at the hinge side of the proposed doorway. Where you start will depend upon where you want the doors to be. If the door must be at a certain spot, then use the hinge side of the door frame as a starting point. If the door or doors can come in any modules



**PARQUET** plywood squares so that patterns alternate. Fasten with 2d finishing nails, or use glue or contact bond cement, instead.

**WHEREVER** "invisible" hinges are placed in the door frames, they will be hidden from view by the surface squares of plywood wall.

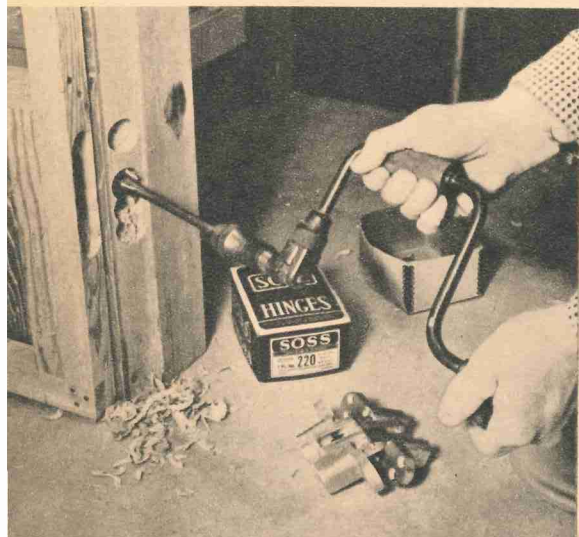


of 16 inches, then begin where the new wall joins an existing wall.

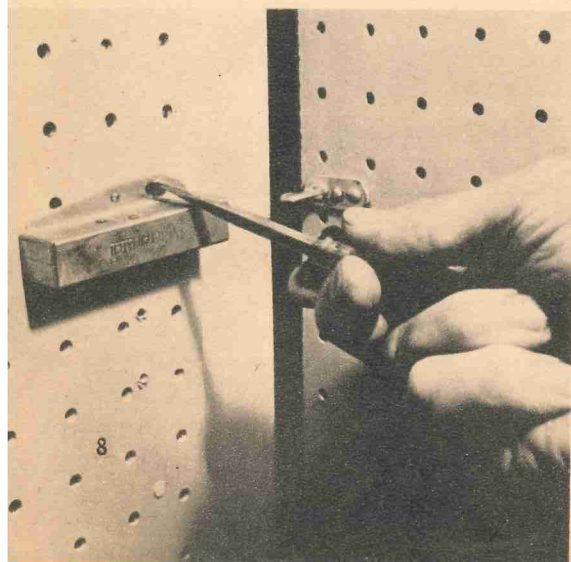
Set a studding against the existing wall, or set up the studding that will become the hinge side of the door frame. Measure 16 inches from the existing wall, or from the hinge edge of the door frame, and center the next stud on this point. Continue placing studding 16 inches on centers from that point.

To position the horizontal parts of





**INVISIBLE** hinges are easy to install. The only tools that are required are an expansive bit and brace, chisel and screwdriver.



**FOR THE LARGER** invisible hinges necessary to handle a standard-size door, a block of 2x2 is needed to brace corner of the door.

your frame, center the first cross member 16 inches from the floor and place the following horizontal pieces 16 inches on center.

Doors can be 2 feet 8 inches wide by 6 feet 8 inches high, modules of 16 inches. The frame for the door should be  $\frac{1}{2}$  inch narrower than the door, and also  $\frac{1}{2}$  inch shorter. That will give a  $\frac{1}{2}$ -inch lip of door surface to lap the wall frame on the latch side and the top, to hide the door's secret. If the door is to be a small one, that doesn't come down to the floor, then the frame should be shortened  $\frac{1}{2}$  inch on the bottom edge also, for the frame lap.

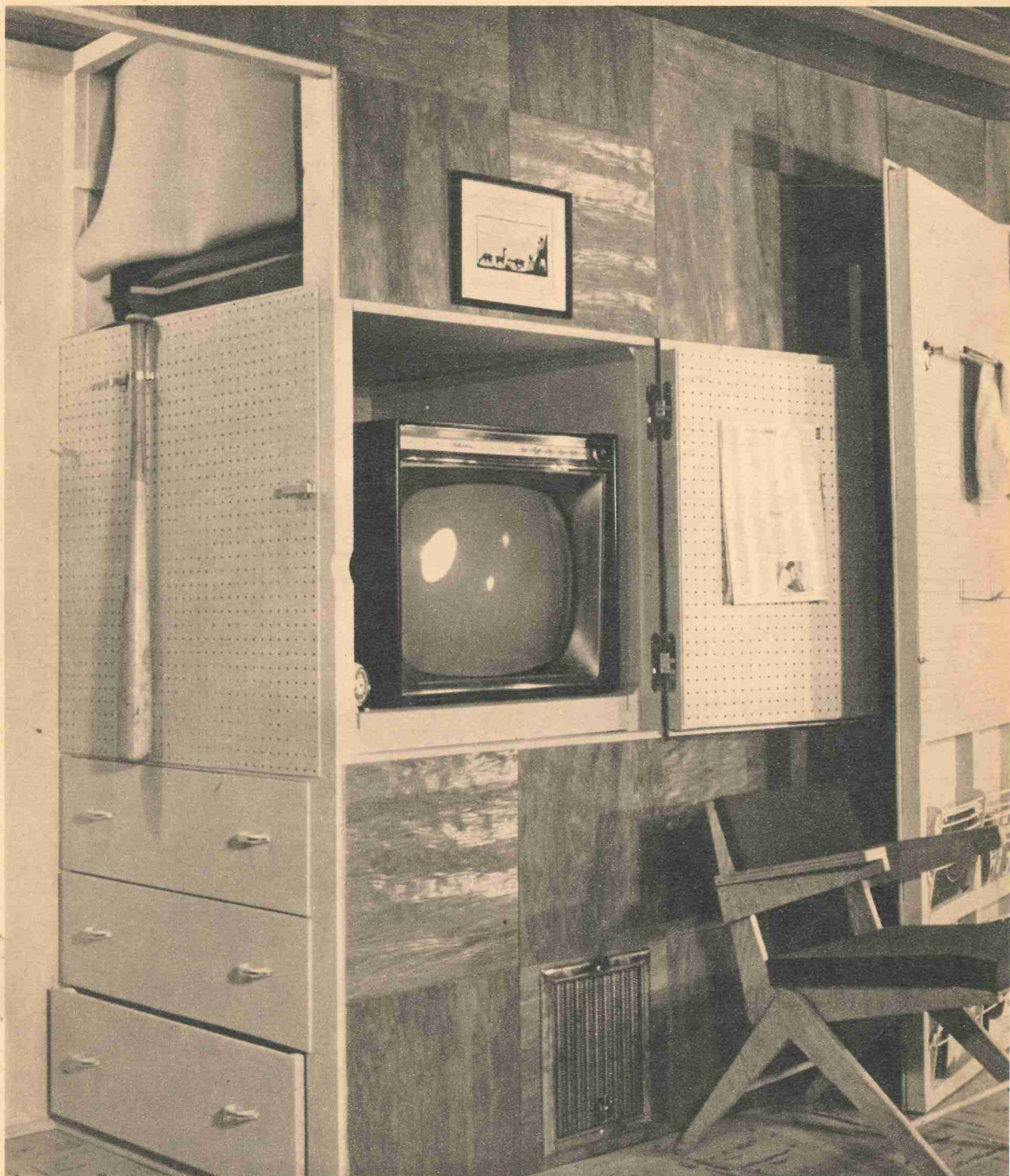
The overall size of the frame for a standard door is  $31\frac{1}{2}$  inches by  $79\frac{1}{2}$  inches. Build it out of 2x2's with half-lap joints at the corners. Center the upright member of the frame 16 inches from the hinge side. Center the first cross piece 16 inches up from the bottom, and those following, 16 inches on centers.

Invisible hinges, made by Soss Mfg. Co., are easy to install. In this case hang your door frame before you cover it on either surface. You may have to beef up the corners of the frame where the hinges come. Put on the squares of wall-board just like any other part of the wall. You can leave the inside of the frame uncovered if you like. However, covering it with pegboard will give you convenient hook and rack space.

A "Tutch Latch," made by the National Lock Co., completes the secrecy of the door. Although  $\frac{1}{8}$  inch of play is needed so that the latch will operate, it is not enough to reveal the line of the hidden door. To open a "Tutch Latch" held door from the outside, press the door surface near the latch slightly and let up on the pressure. On the inside, pull the door slightly inward and let go quickly, and the door will open. •

**A SIMPLE "Tutch Latch"** completes the secrecy of the three hidden doors. A slight pressure on door surface releases the latch.

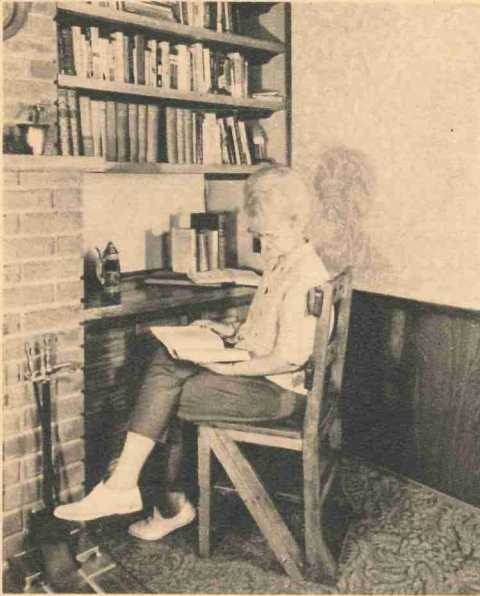




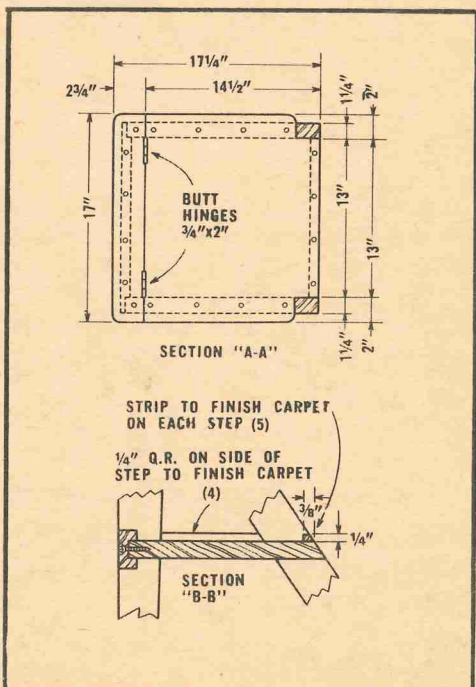
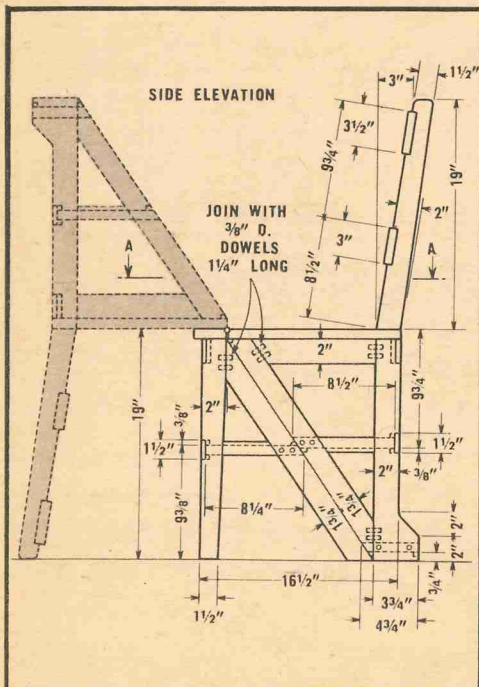
**HERE IS THE WALL** with all doors open, showing the storage closet with built-in drawers. The TV, and bathroom door at right, also have the pegboard backs on which to hang articles.



# the CHAIR...that becomes...

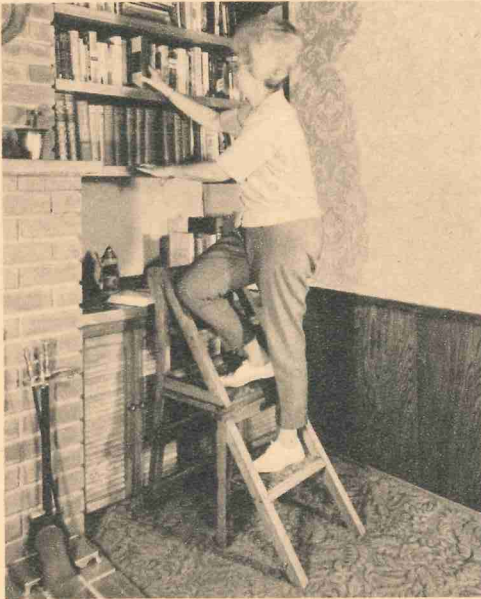


**An Old English conversation piece that will move you up in the**

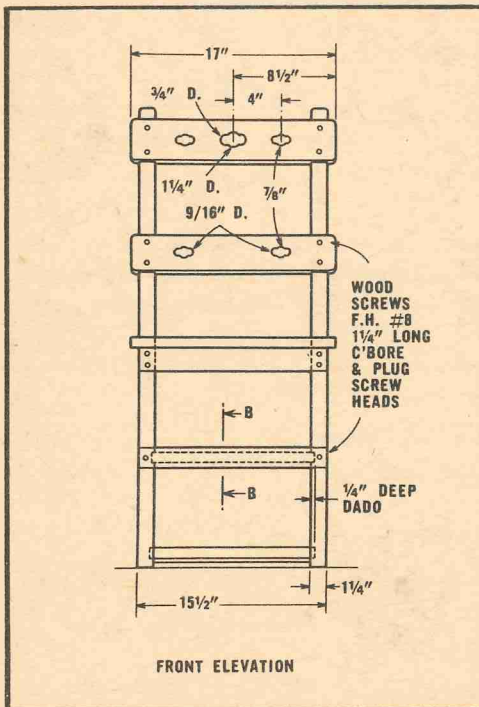




# a LADDER!



**world and give you comfort, too!**



**T**HIS REPRODUCTION of a Victorian chair ladder is as useful as it is unusual. Simply unfasten two hooks and flip the back over to convert the chair into a sturdy stepladder. It is just the thing for reaching the top shelves of a bookcase or high cabinets in the kitchen. The chair pictured was made from pine, but mahogany and other woods may be substituted.

Begin the project by making a full-size layout of the chair profile on heavy paper or plywood, locating all dado cuts. This layout will be useful for determining dimensions and angles and will facilitate assembling.

**Cut the side pieces** from 1 1/4-in. stock and drill the legs and diagonal members for 3/8-in. dowels where indicated. Make the dado cuts to receive the seat, steps, braces and the back slats. Locate, drill and counterbore all screw holes for step attachment.

Sand the side members and assemble with dowels and glue. While the glue is drying, rip the two upper and the two lower braces from 3/4-in. stock. Rabbet all eight ends and dado the lower braces to receive the steps. Drill and counterbore for screws and sand smooth. Cut the steps from 3/4-in. stock, saving the beveled strip removed from each step for the tread trim.

Next, attach the front and back braces and steps to the side assemblies with glue and screws. Rip the back slats to size and add the cutout detail by drilling a combination of holes with different size bits. Drill and sand the slats and attach them to the chair back.

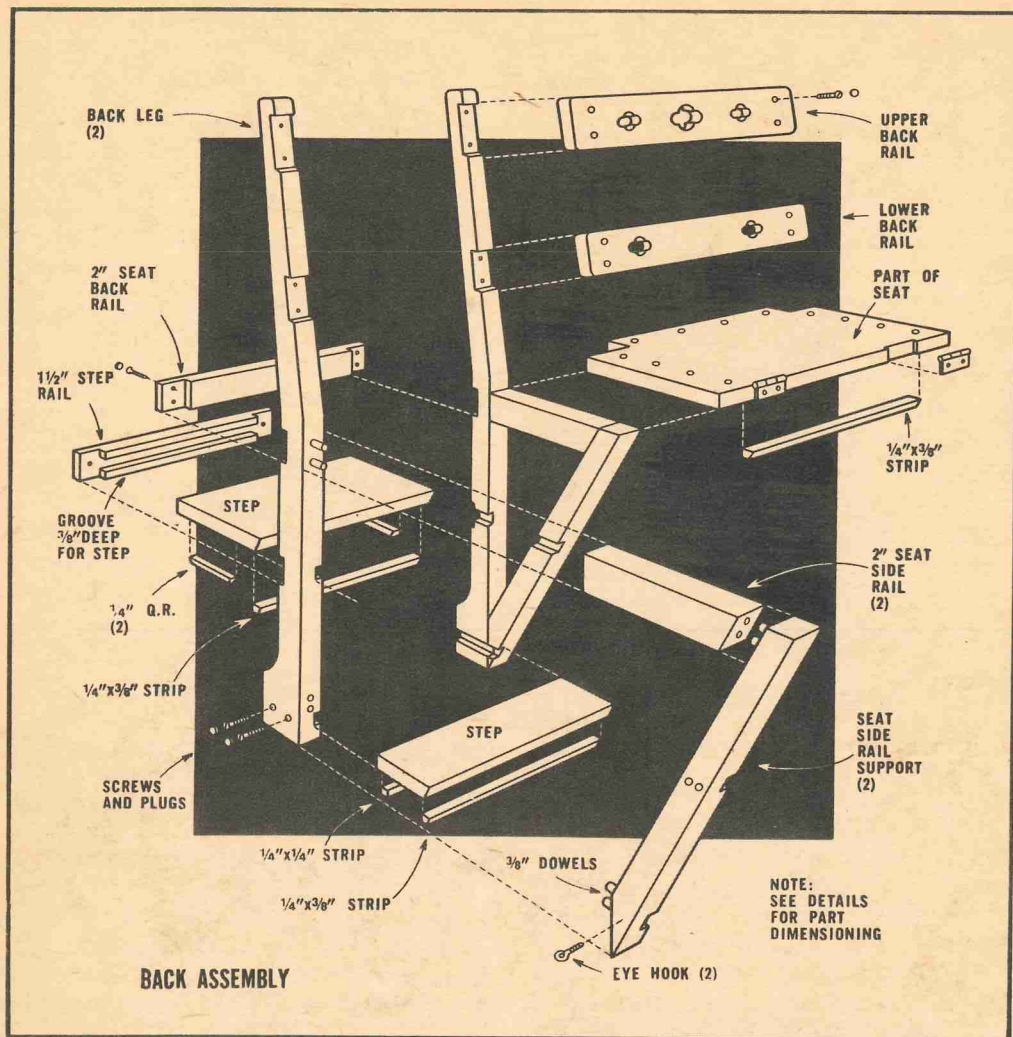
**With glue and small nails,** add the quarter-round molding and beveled trim strips to the steps. These will hide the edges of the carpet.

Cut the two seat boards to size and drill for screw attachment. Add the mortises for the two 3/4x2-in. butt hinges. Sand the seat boards smooth and install. Plug all screw holes with dowel stock.

If an antique finish is desired, round off corners and edges irregularly with a chisel or rasp and sand smooth. Nicks and other distress marks also may be added.

**In finishing the chair,** apply natural paste wood filler to all surfaces and wipe

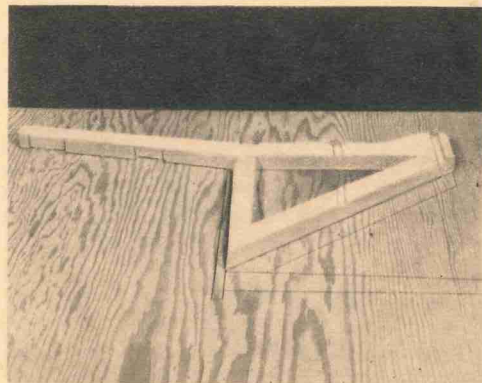




clean. After the filler has dried, sand with fine sandpaper and stain to the desired color. Allow to dry overnight before spraying or brushing on two or three coats of lacquer sanding sealer. When dry, smooth with fine steel wool and apply wax.

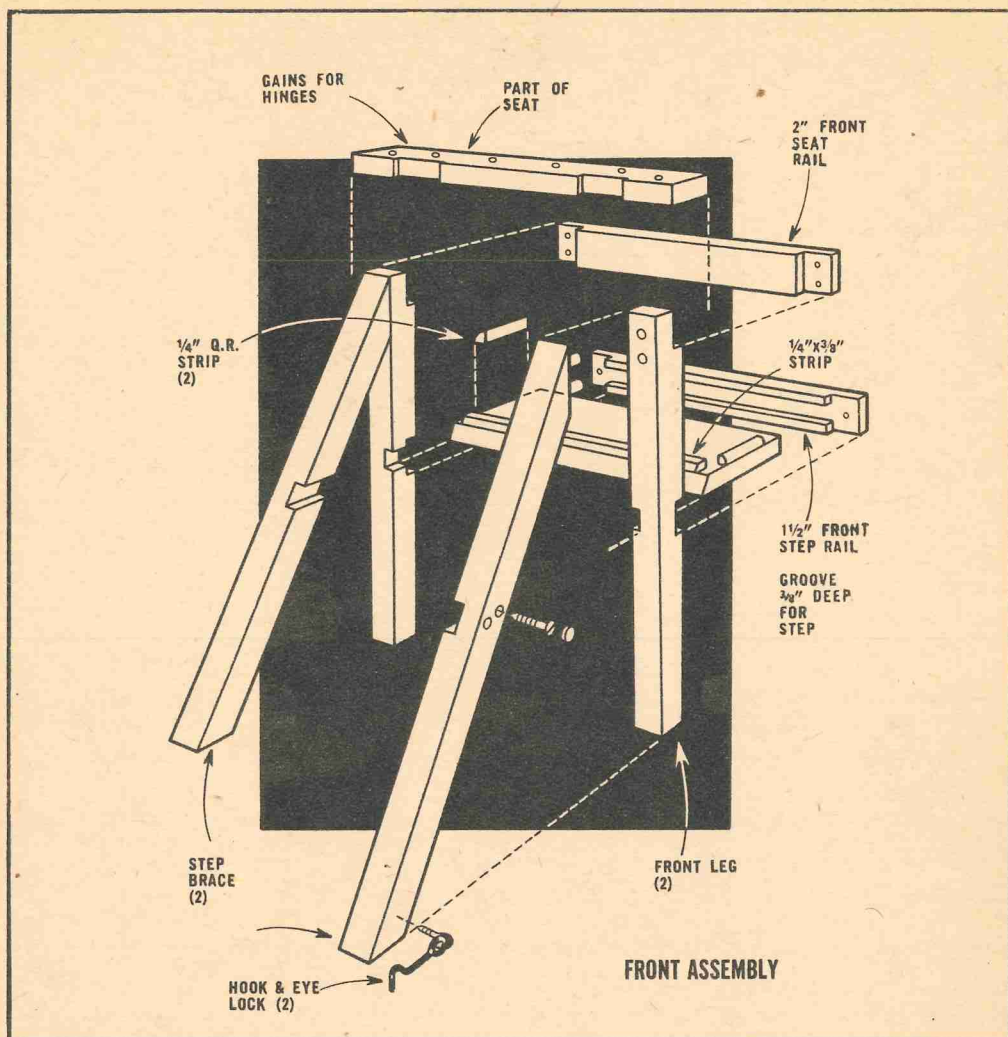
Cut pieces of carpet—in character with the room in which the ladder will be used—to fit each step and attach with contact cement. Oriental carpeting provides a nice period touch. Install the hinges to join the two parts of the chair ladder, add the hook-and-eye catches (these come with character, too) and you are ready to step up—or relax. •

— Bruce Burk



**DRAW** full-size layout of chair profile to determine angles and facilitate assembling.





**FRONT ASSEMBLY** is a simple stepladder that is joined to back assembly by hinges.



**DETAIL** in back slats is added by drilling overlapping holes with different size bits.



# LUGGAGE CARRIER

*Travel in style and take along as much luggage as you need for anything short of a trip to the moon.*

**T**HIS streamlined car-top luggage carrier can be built for approximately \$10—less if you have some scrap lumber and hardware available.

Besides the hardware, you'll need four 10-ft. lengths of 1x4-in. lumber, one 4x6-ft. panel of  $\frac{1}{8}$ -in. Masonite Tempered Presdwood and one 4x7-ft. panel of  $\frac{1}{4}$ -in. Masonite. This will give you enough material for the four-foot-square carrier shown on these pages. The dimensions can be adjusted if necessary to suit special needs.

The carrier's curved top, formed by bending and nailing the  $\frac{1}{8}$ -in. hardboard to the side frames, reduces wind resistance and increases gasoline mileage.

**Rip 1x4s into 1x2s** for the bottom, side and door framing. Make a full-size template for the curved end pieces and cut from 1x4 stock. Cut the doors and side panels from the  $\frac{1}{4}$ -in. hardboard and nail to the assembled framing. The doors are hinged at the top and give easy access to the interior of the carrier.

Nail the four-foot square of quarter-inch hardboard to the carrier framing for a sturdy, splinter-free bottom. Near each end nail a length of 1x4-in. board for attachment of the suction cups which hold the carrier in place. Conventional gutter hooks and web anchor straps secure the carrier. The straps fasten to eyebolts, the eyes of which have been flattened by hammering.

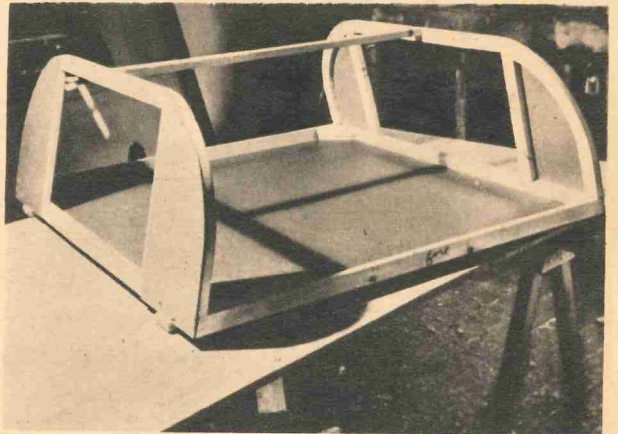
**Hinge hasps** are used to hold down the doors. Small padlocks may be added to bar pilferers.

Prime the wood and apply two coats of exterior-grade linseed-oil-base paint.

You now have a carrier large enough to hold all the luggage the average family—that excludes royalty and film stars—might need for anything short of a trip to the moon. •

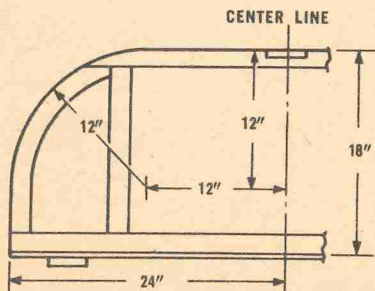
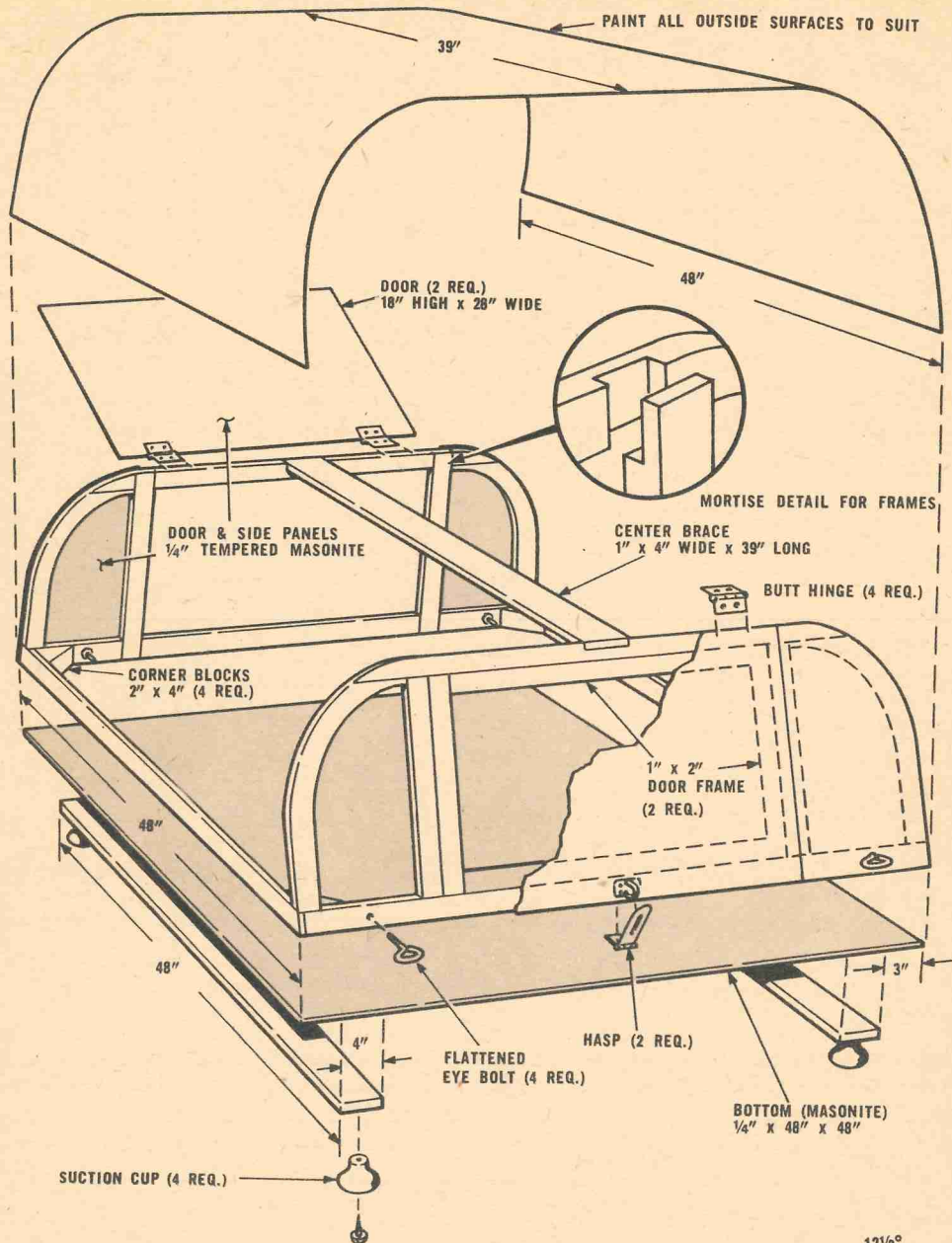


**CAR-TOP CARRIER** is easy to mount and the answer to the too-small trunk compartment.

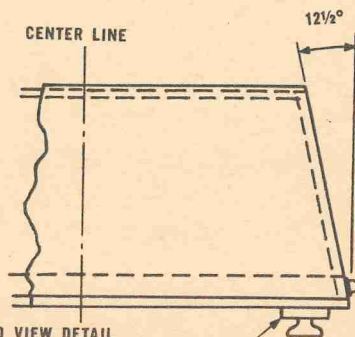


**CORNER BLOCKS**, glued and fastened with nails or screws, can be cut from scrap 2x4.





PLAN FOR TYPICAL CURVE ON FRAMEWORK.  
BOTH SIDES ALIKE.



END VIEW DETAIL  
BOTH SIDES SLANT INWARDS 12 1/2°  
ONLY ONE SIDE SHOWN

IF NECESSARY USE PADS  
1" x 4" x 4"  
TO CLEAR CAR TOP



# STEREO COFFEE TABLE



By John Capotosto

**F**OR MI guys who like good music and fine furniture, we present the answer to both desires. Our coffee table of richly grained mahogany is a complete hi-fi center, containing all components necessary for reproduction of enjoyable stereo sound.

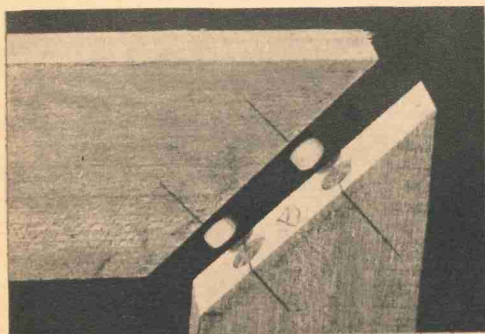
Measuring only 20 $\frac{3}{8}$  in. high and 17

in. deep, this unit houses an AM-FM tuner, 15-watt stereo amplifier, two 12-in. speakers and an automatic turntable which can handle a stack of ten platters.

Sliding panels at the top conceal the tuning knobs and turntable so the full length of the table may be utilized during non-musical moments. Solid brass grille backed by black velvet adds to the beauty of the piece. If you prefer, speaker cloth may be substituted for the metal grille.

Except for the turned legs, construction is quite simple. Two mitered frames connected by corner posts and dividers make up the main part of the table. Dowels, glue and screws are used in the assembly. All exposed wood is mahogany.

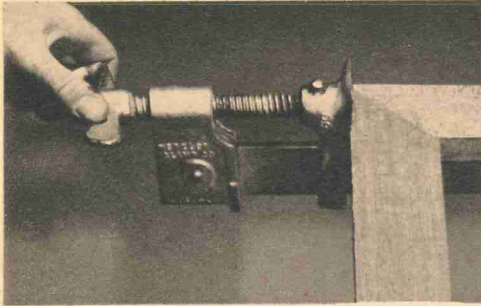
**Begin construction** with the frames, which are ripped to size and then mitered. Before cutting the miters, plane the edges of the stock to remove all kerf marks. Test the miter on scrap lumber before proceeding with the mahogany;



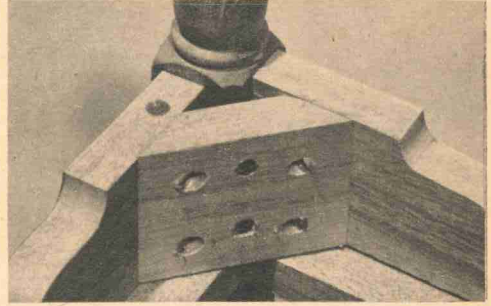
**DOWELS** are splined and cut a bit shorter than the hole. Bevel the edges slightly.



Coffee and good music are both at your fingertips with this elegant piece of furniture made out of rich mahogany wood.



**CLAMP** mitered frame securely while the glue sets. Use non-staining white glue.



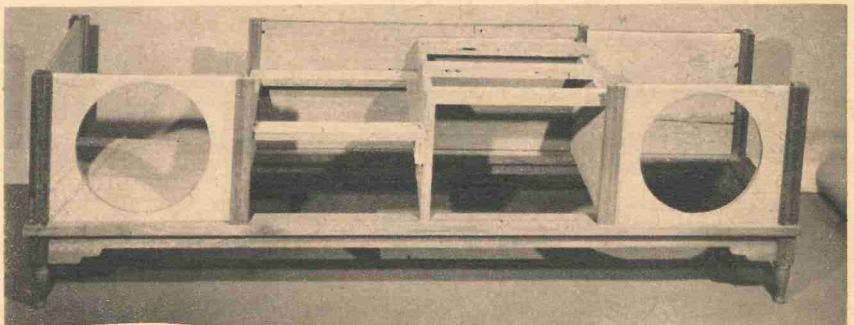
**LEGS** are held in place by corner braces screwed to the apron on the perpendicular.

an error here could be expensive. When cut, lay the sections on a flat surface and locate the dowel positions with a pencil. Use a square to transfer the lines to the mitered edge, then drill the dowel holes. Assemble with glue and clamp until dry.

Stock for the corner posts and legs is glued up using two pieces of  $\frac{3}{4}$ -in. stock ripped slightly wider than  $1\frac{1}{2}$  in. to allow for dressing. The dividers are single pieces of  $\frac{3}{4}$ -in. stock. Set a stop on the miter gauge when cutting these pieces so that all will be uniform, then

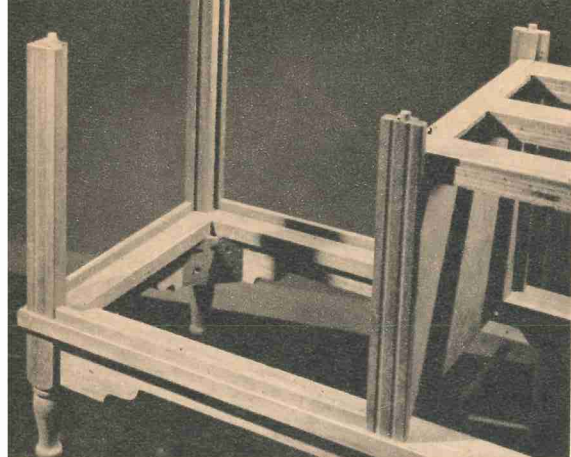
plane to  $1\frac{1}{2}$  in. and groove. Grooves may be added in a number of ways—using a shaper, router, drill press or table saw. We used a half-round cutter on the shaper, but if you want a square groove your best bet would be the table saw, with a  $\frac{1}{8}$ -in. blade. The grooves should not be more than  $\frac{1}{16}$ -in. deep or they will be too pronounced.

After grooving, rabbet the pieces and assemble as shown, using screws at the bottom and dowels at the top. The posts should stand square and parallel to each other. If you like, dowels may be used

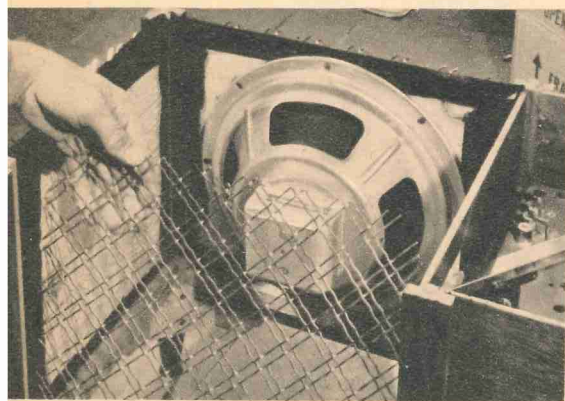


**VIEW** of partly assembled stereo coffee table shows placement of shelves for the components. All joints must be tight to forestall audio vibration.

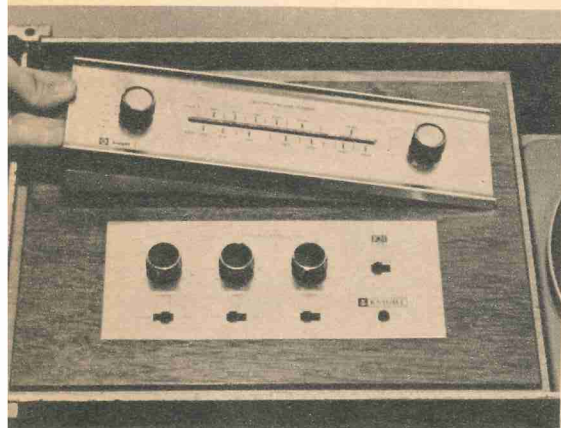




**RABBET** the corner posts and dividers to receive grille and speaker board or dummy.



**WIRE GRILLE** of this type will accordion so be sure size is correct before cutting.



**OPENINGS** in top panel should be cut for a neat fit around the tuner and amplifier.

throughout in assembly. If you don't have one, borrow a doweling jig. It insures perfectly aligned holes with a minimum of effort.

The turned legs (or straight taper, if you prefer) are attached by means of corner braces screwed to the apron through holes drilled at a 45° angle—so the screws enter the apron perpendicularly. Fasten with flathead screws and countersink the heads. In most chair-and-table construction legs are secured with lag bolts, but for our purpose two-inch flathead screws worked out fine. To prevent splitting the wood, drill pilot holes after screw positions have been located.

The speaker mounting boards and dummies are cut from half-inch fir plywood and covered with black velvet. The end panels measure 12½ x 12½ in. Since the mounting holes in these boards will be close to the edge, they should be set at a slight angle so the screws will have a better purchase in the corner posts and dividers. An allowance of ⅛ in. all around for the velvet should be plenty. It should be emphasized that velvet and not velveteen is to be used. There is considerable difference between the two. Velvet is on a silk backing while the latter is on tightly woven cotton, which would have a tendency to muffle the sound from the speaker.

The metal grillwork is held in place by pressure from the mounting boards. It is important that these boards be secured firmly or you may be plagued by vibrations.

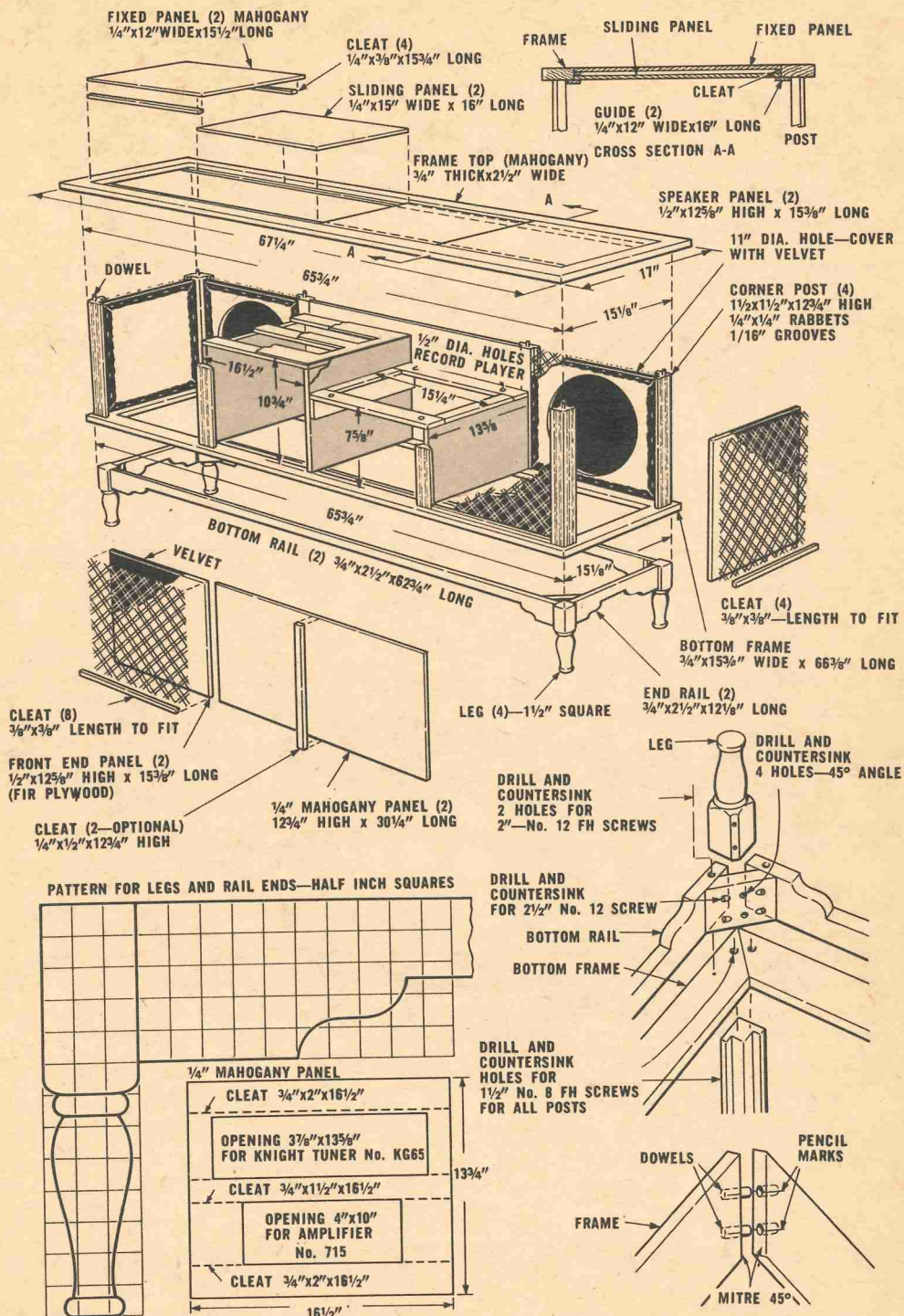
Follow the detail drawing for installation of the fixed and sliding top panels. A slight fingertip recess in the sliding panels allows them to be opened and closed with ease.

Finish the table with an application of mahogany paste filler followed by several coats of brushing lacquer. Use paste wax and fine steel wool for a final finish.

Audio components used in MI's stereo table include:

AM-FM tuner (kit), Allied Radio, KG-65.....	\$49.95
15-watt stereo amplifier, Allied Radio, KN-715	39.95
Miracord automatic record player, PW10.....	89.50
Two 12-in. speakers, Allied Radio, KN 822HC	25.90







# Laundry Cabinet

**Y**OU can easily put an end to washday confusion and add considerably to the neatness of the laundry room by presenting your wife with this convenient cabinet which will enable her to keep her clothes neatly sorted. Separate bins are provided for white clothes, colored clothes and for lingerie. The project will fit neatly in a corner without taking up too much floor space and can do away with hampers, or those piles of dirty linens that always seem to accumulate on the washing machine.

The top of the cabinet provides a work surface which can be covered with linoleum or tile or a plastic laminate. And, of course, there is a special place for the soaps and detergents and bleaches that should be handy to the washer.

After the plywood parts are cut to size, sand all edges carefully so they

won't snag fabrics. Glue and nail all joints.

Follow this schedule for easy assembly. . . .

Nail through sides "H" into back "I."

Nail through the sides and the back into the bottom "B."

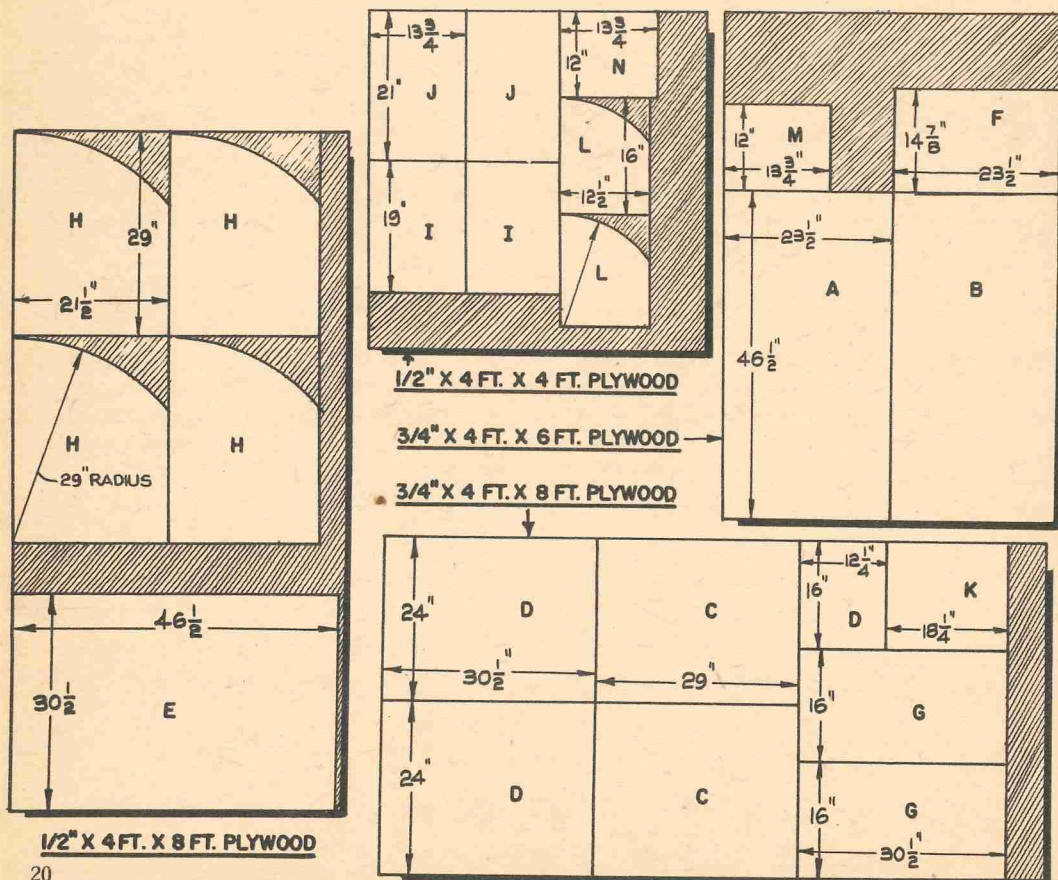
Install the partitions, the shelf and the top and attach to the base.

The top edge of the sides of the tilt-out bin should be curved to a 28½-inch radius; the sides of the lingerie bin to a 16-inch radius. It's a good idea to check parts for fit before assembling the bins.

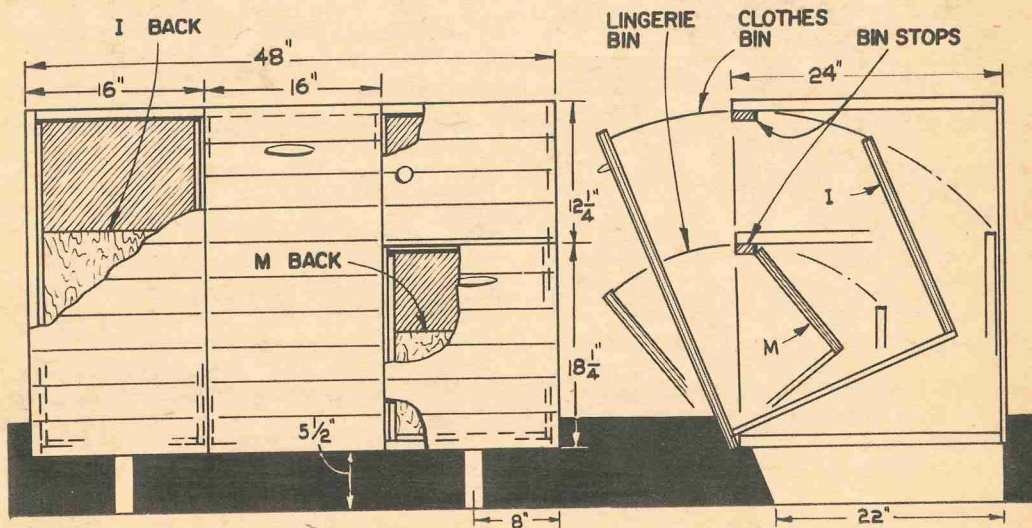
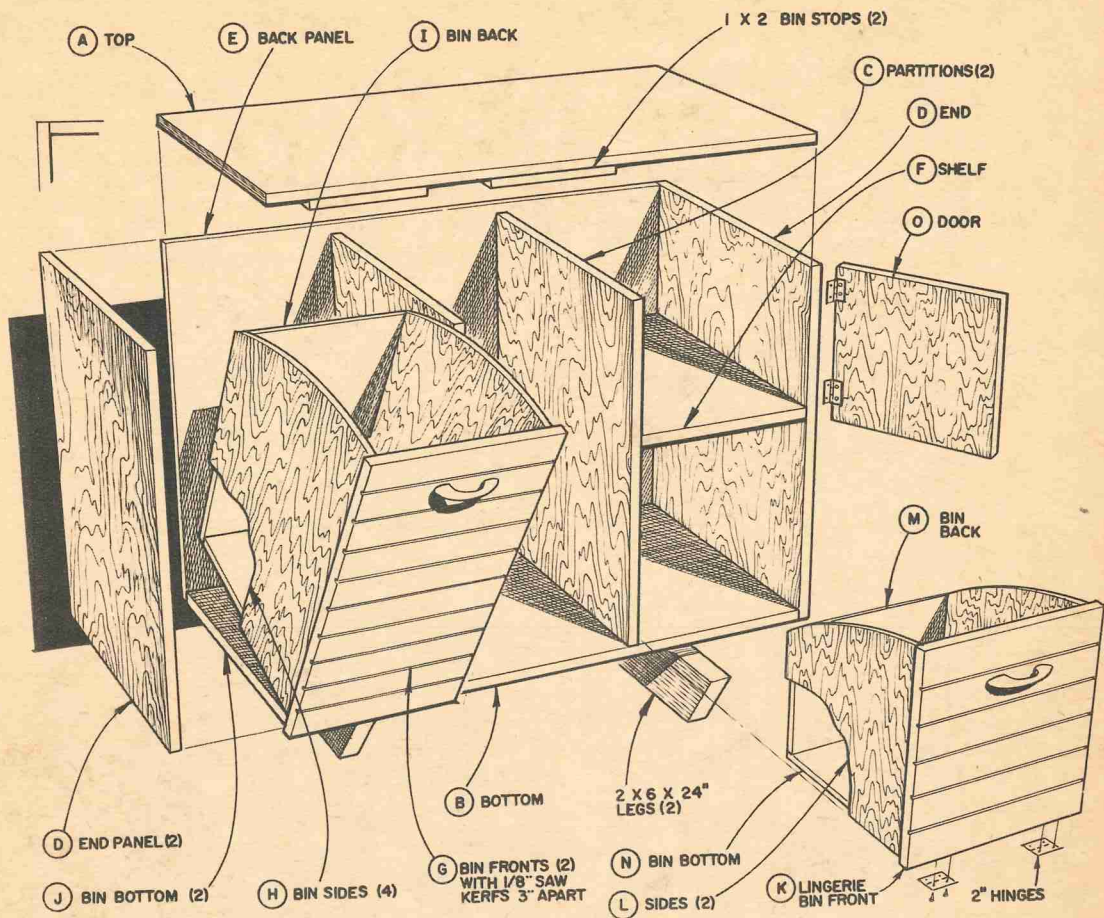
Nail the sides of the bins to the bottom (front edges in line), then add the backs, the front and the hinges. Position bin stops underneath the top.

Finish both inside and outside surfaces to protect against moisture. •

*R. J. DeCristoforo*

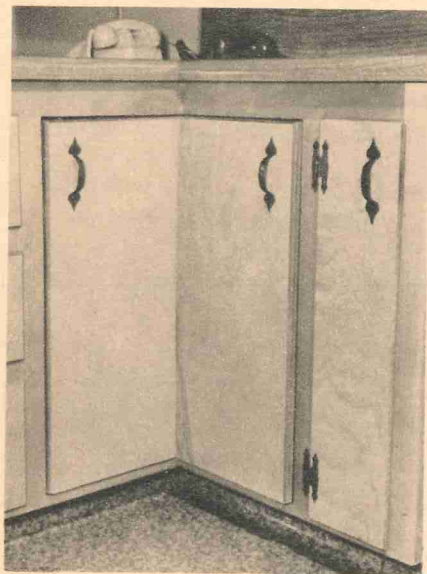








# POT 'N PAN TURNTABLE



**DUMMY DOORS** disappear at touch to bring pots and pans into view on turntable. 

**N**O STOOP, no squat, no squint for the housewife when she retrieves a pot or pan from this cabinet, for the turntable will swing each utensil in turn to within easy reach.

Note that while the cabinet pictured is only 24-in. deep, the revolving shelves are 33½ in. in diameter and will accommodate utensils in a wide variety of shapes and sizes. Adapt these dimensions to your cabinet.

With an existing cabinet, you will have to remove the top or work surface to install the turntable. If you are putting together a custom job, you can

include the turntable in your planning.

**Cut the circular shelves** from half-inch plywood, with a 90° wedge section cut out to receive the dummy doors. These are installed with finishing nails which are countersunk and covered over with wood putty. Finish the plywood edges of the doors with wood tape or trim.

The rim for each shelf is made from spruce which is steamed or soaked and then bent around the shelf perimeter and secured with nails and glue.

Locate the axis for the turntable, allowing for necessary clearances, and install the upper and lower bearings.

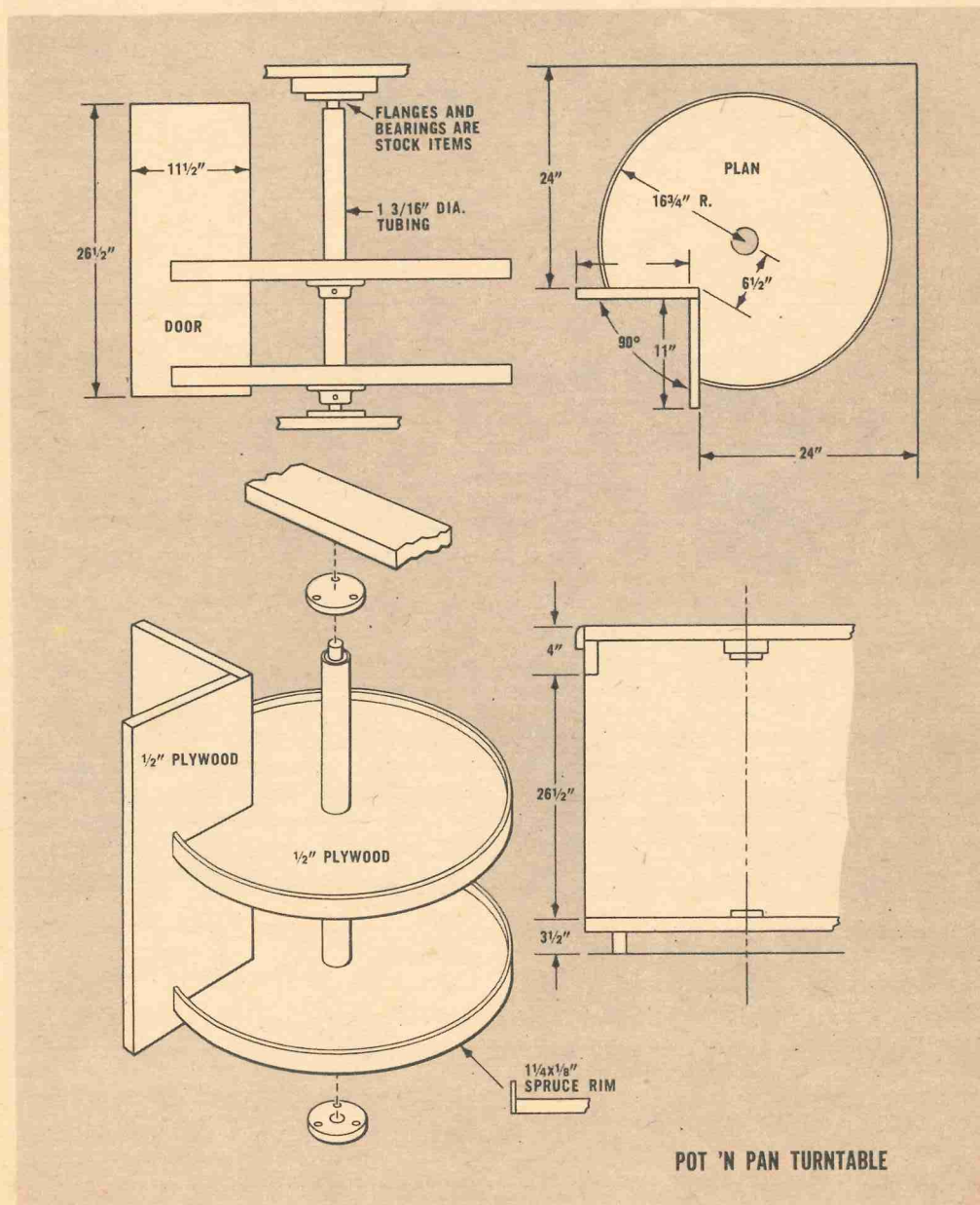


These are stock items available at most hardware stores or from Washington Steel Products, Inc., Lazy Susan Dept., 1940 E. 11th St., Tacoma, Wash.

**The shelves are supported on the axis** by flanges with set screws. Adjust to the desired spacing before attaching the

doors. In the project shown, the lower bearing is raised from the floor for convenience.

Cover the shelves with Formica or finish with wax. Finish the turntable's dummy doors to match the other cabinet doors. • —Hi Sibley







build this

## WEATHERVANE CUPOLA

By Don Shiner

**D**RESS UP the roof line of your house, garage or cottage with this smartly styled cupola. MI's weatherwise unit can cool, too, by ventilating the attic during hot summer months.

Decide first what size cupola will best serve your needs. You may wish to increase the dimensions given here, both

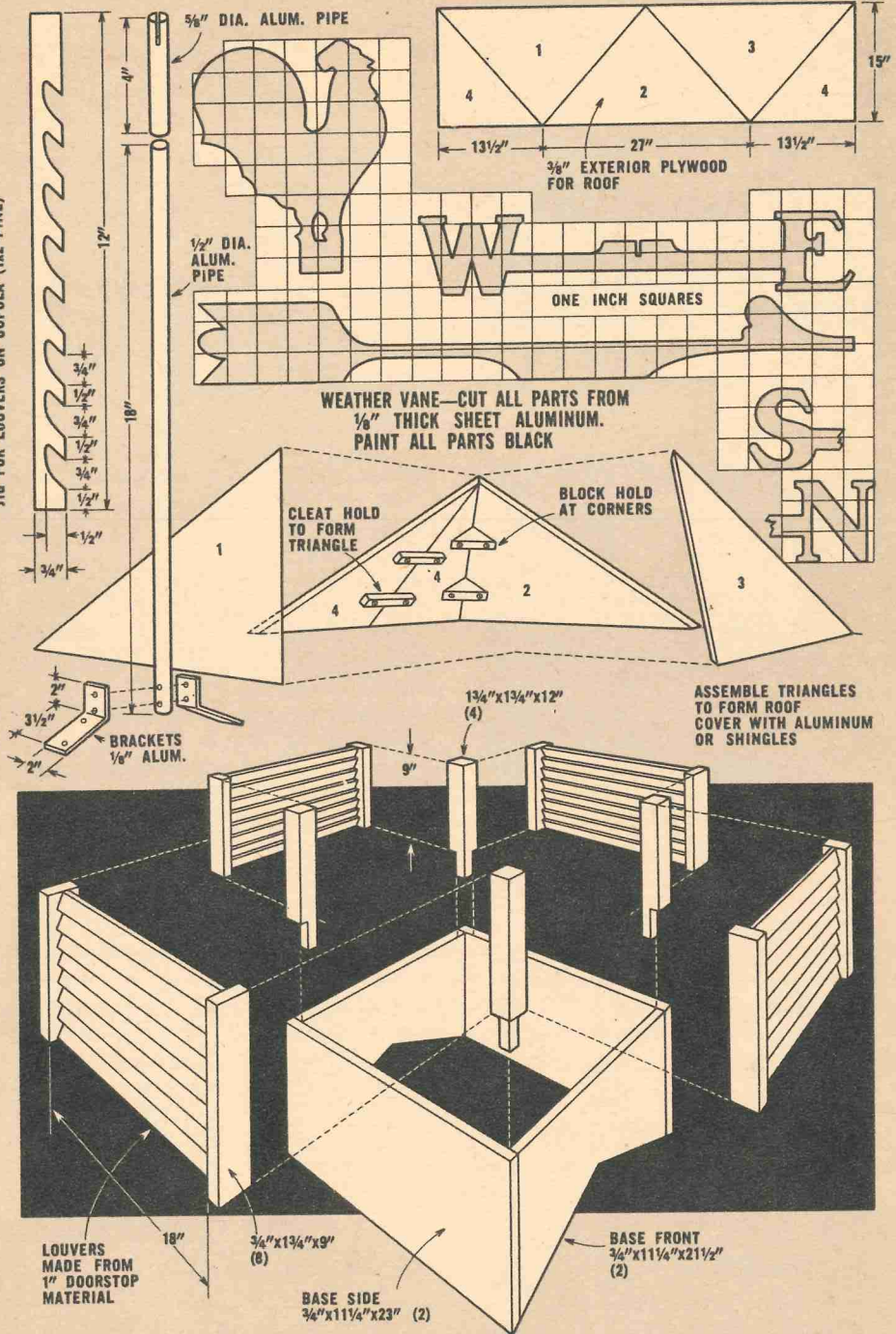
for the visual effect and for ventilation.

**Begin the project** by cutting a jig from 1x2 pine to assist in positioning the louvers. This jig is a real time-saver when nailing the louvers to the supports. Use a C-clamp or tack the jig to the end piece, then fit each louver into its slot and fasten with galvanized nails.

Complete the four louvered breathers and nail or screw-fasten to the corner

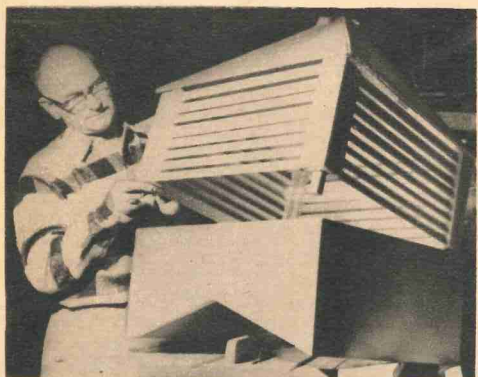


JIG FOR LOUVERS ON CUPOLA (1x2 PINE)

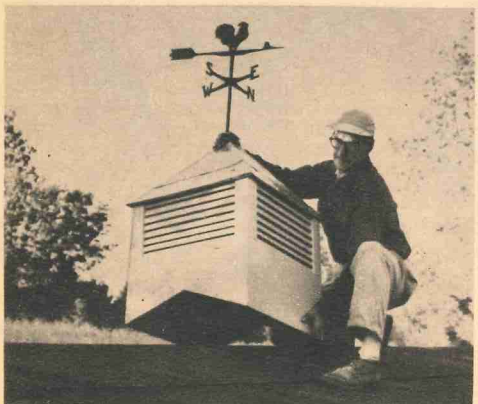




**NAIL or screw-fasten the four louvered cupola breathers to the 2x2 corner posts.**



**BASE is cut to correspond to roof angle and attached to extensions of corner posts.**



**ORIENT the weathervane and attach cupola to previously determined position on roof.**

posts. These should be rabbeted to fit snugly inside the cupola base.

Build the base next. To determine the angle for the roof cutout, lay two sticks across the peak of the roof and nail or tape the intersecting ends together. Transfer this angle to the base as a cutting guide.

When the cupola is strictly ornamental, it can be nailed directly to the roof, right over the shingles. Use finishing nails long enough to extend into the rafters.

If the cupola is to ventilate the attic area, cut an opening in the roof between two rafters. A pair of panels can be hinged to the underside of the roof to close off the opening when cold weather comes. Use aluminum or copper flashing around the base when mounting the cupola for use as a ventilator.

**Constructing the roof** of the cupola is easy if you follow the cutting plan. To lengthen the roof, use a wider sheet of plywood. The unit will look best if it duplicates the natural roof pitch.

Nail the plywood roof to the corner posts of the louvered base before applying the roofing material. Cover with aluminum flashing or shingles like those used on the house. Provide sufficient overlap to guard against leaks.

Make the weathervane components from  $\frac{1}{8}$ -in. sheet aluminum and paint them flat black. Attach the weathercock and wind indicator to a four-inch length of  $\frac{5}{8}$ -in. aluminum tubing. Slot the end, insert the finial and arrow and bolt them in place. Plug or cap the top of the tube to keep out water.

The arms with the compass headings are oriented and bolted to the upper part of the fixed weathervane staff. The top piece fits loosely over this smaller shaft and swivels freely with the breeze. Don't forget to apply a dollop of oil before climbing down from the roof.

Brackets cut from sheet aluminum anchor the staff to the cupola roof. Use a level when mounting the staff to insure that the wind indicator will be balanced.

If you have been considering a cupola, here's a cool one you can build at little cost. This one shouldn't nick you for more than \$10. •



# MULTI-PRINT EASEL

*Would you like to process four or eight prints at the same time and all on one sheet of paper?*

By Kevork K. Fags

**O**UR Multi-Print Easel is a device that makes printing photos in quantity a snap. It can be constructed for next to nothing and is especially handy when processing identification photos, Christmas cards or sets of snaps for friends and relatives. It's useful also for making test prints at varying exposures.

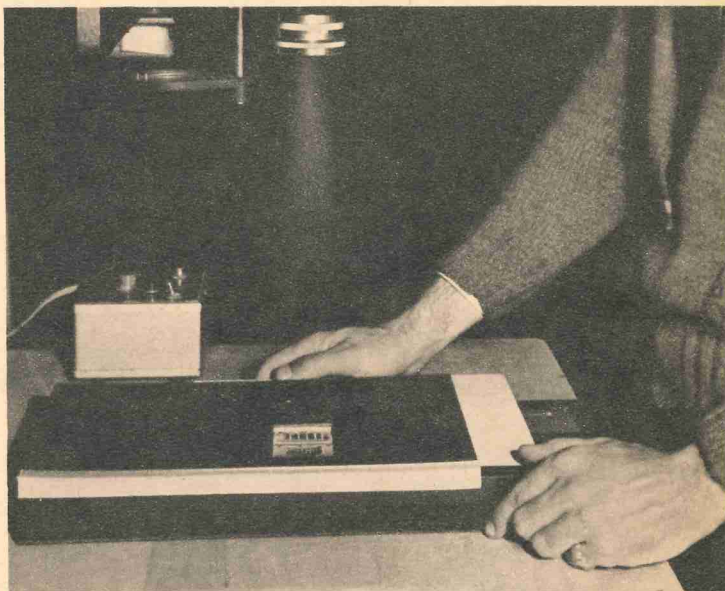
The step-and-repeat easel can be indexed to print any combination of photos (same size) that will fit on an 8x10 sheet of enlarging paper. Ours has been indexed to print either four 3½x4½s or eight 2x3s.

The easel base and the platen are cut from 1x10 clear pine. The guide rail is cut from 1x2 furring or scrap one-inch lumber. The backstop can be cut from quarter-inch plywood.

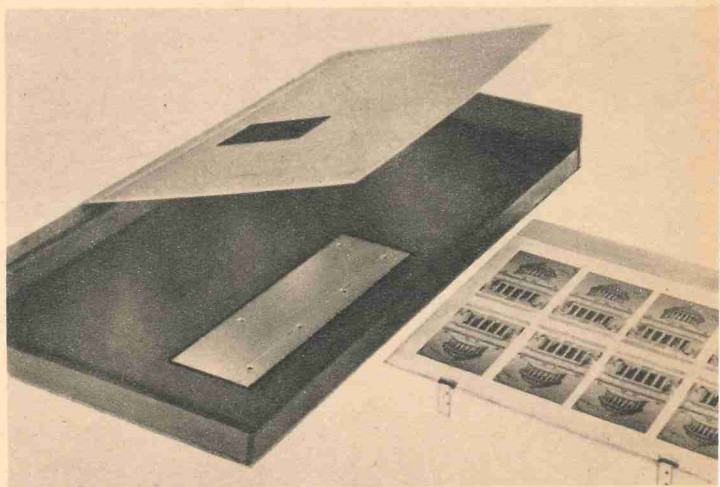
Assemble the base, backstop and guide rail with glue and finishing nails. Make sure the guide rail is slightly higher than the platen.

Cut out a piece of sheet tin for the index plate. This can be taken from the side of a gallon can. Recess the plate into the easel base as shown on the plan.

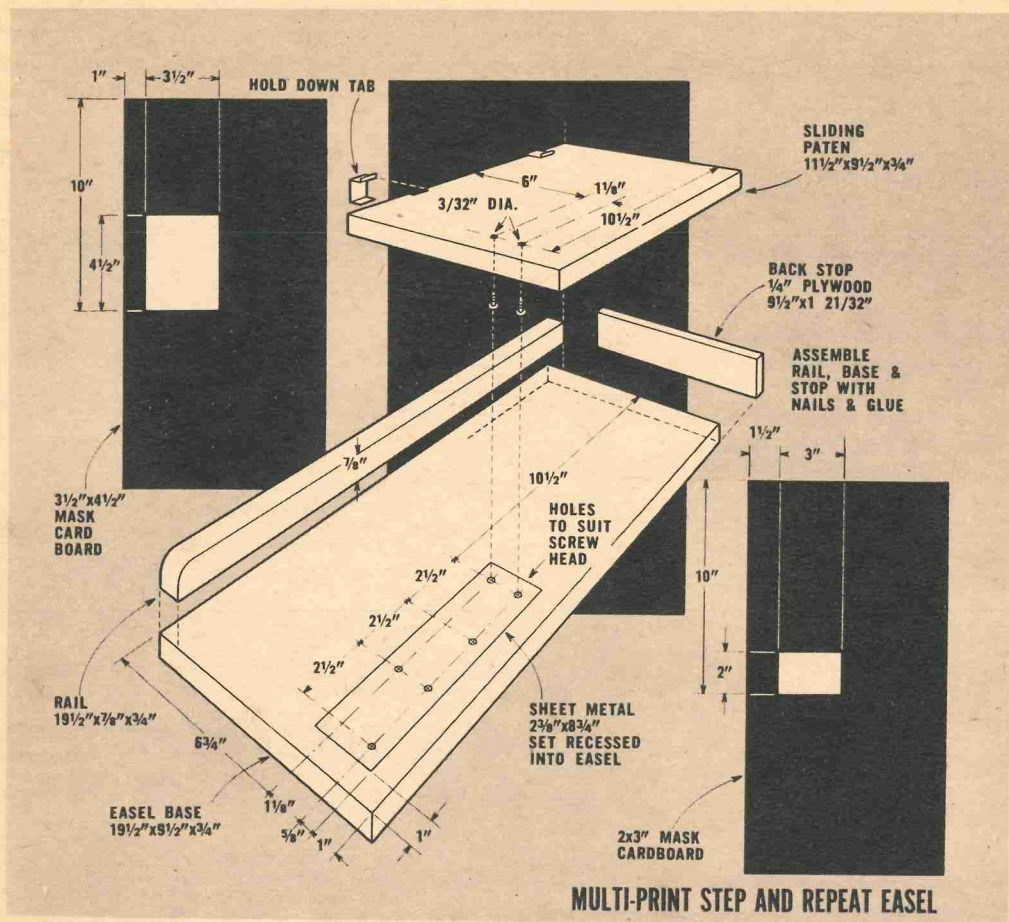
If you are heavy-handed and likely to shift the easel while using it, drill several



**STEP-AND-REPEAT** process permits you to expose just that area of the enlarging paper framed by the printing mask.



**THERE** are no alignment problems if you square up the enlarging paper with top and left edges of the platen.



**MULTI-PRINT STEP AND REPEAT EASEL**

holes in the sides and fill with molten lead to weight the base.

Cut two recesses in the side of the platen for the paper hold-down tabs. These can be fashioned from paper fasteners (No. 22 Acco fasteners) obtainable at most stationery stores.

Using the dimensions on the plan, cut out the printing masks. A good material for these is cardboard salvaged from enlarging-paper boxes.

**To index the easel,** make templates on 8x10 paper, showing the print in each position, to fill the sheet. Place the template on the platen in the same position as you will place your enlarging paper. Set the platen on the easel, making sure that it butts against the guide rail and backstop. This is the first print position for any size print.

Now position the mask so that the

opening lines up with the bottom left outline on the template. Using pressure-sensitive tape at least 1 1/2 inches in width, hinge the mask to the guide rail.

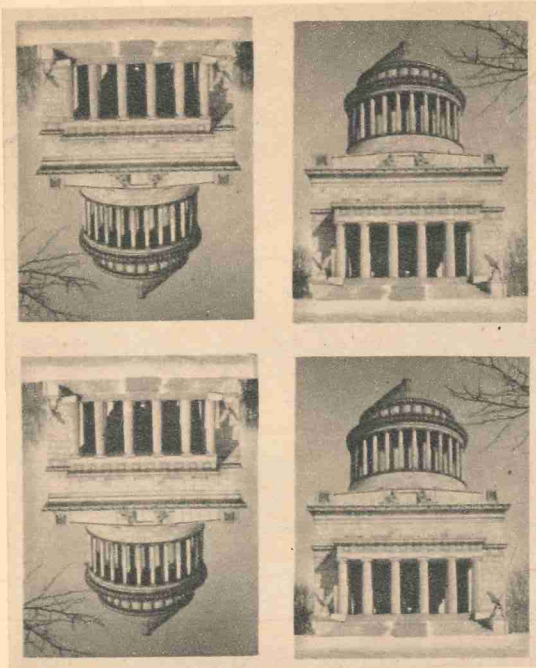
With everything lined up in the first print position, lift up the mask and drill a 3/32-in. hole through the platen, the index plate and, to a depth of one-quarter inch, into the base.

**Replace the mask** and move the platen to the next position. Using the same hole in the platen, drill a hole in the plate and base for position No. 2. Repeat this procedure until you have indexed the whole column.

A fillister-head machine screw is secured in the hole in the platen on the underside as a positioning pin. Enlarge the holes in the index plate and base to accommodate the screw head.

Give all parts a coat of sealer and sand





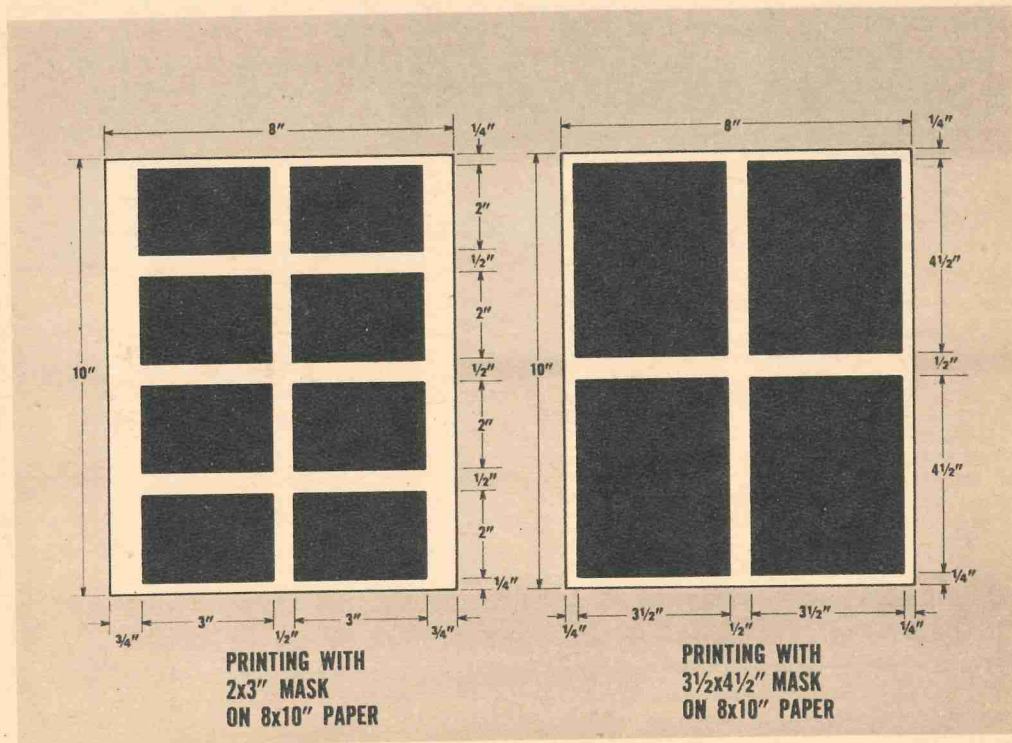
**INDEXING** may be set up to leave border around each print or to butt one against the other.

smooth when dry. Paint the easel a flat black and the platen a light yellow. The yellow will help you to focus but will not reflect enough light to fog the image. As a final step, glue non-skid rubber strips to the bottom of the easel.

**To use the device**, position the easel in the No. 1 position and focus on the platen through the mask opening. Switch off the enlarger lamp and slip a sheet of enlarging paper under the tabs on the platen. Make your first exposure, then lift the platen slightly and move it down to the next position.

After completing the exposures on the left half of the paper, simply slip the paper from under the tabs and rotate it so that the outside column becomes the inside column.

After a few tries you'll be able to operate the easel by touch. And when it comes to developing and finishing, you will have reduced to a fraction the work involved if you had made each print on a separate sheet of paper. •

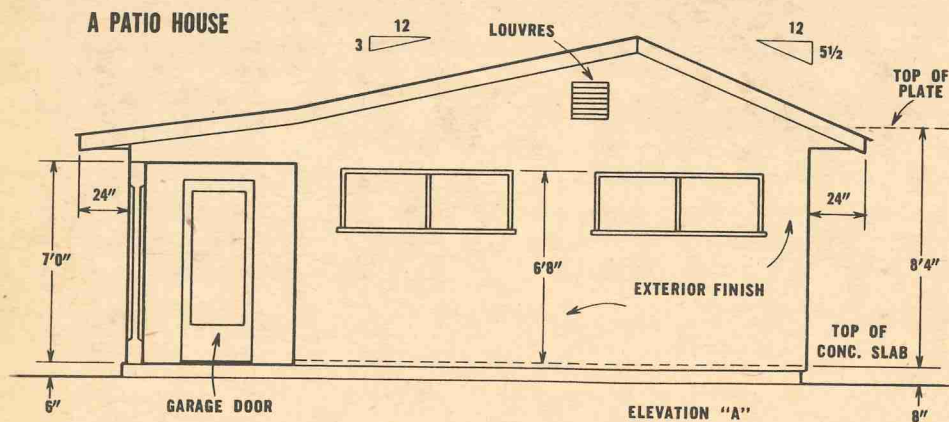


BY ARNOLD MARQUIS



## NEED AN EXTRA ROOM?

Well, everybody does it seems. Read how this homeowner solved a vexing problem.





**W**ITH our teenagers and their friends bursting out the walls of our house, we had to find a bigger house or build on to what we had. This is not an uncommon problem. Especially in California, where we live.

My wife's a school teacher. Our daughter, Sandra, is an art student. Neil is in high school. I'm a writer-producer.

We looked at bigger houses. They would have put us in the hands of the receivers.

We looked at built-ons. No soap.

But we found the ideal solution. We built a separate patio house of 528 sq. ft. on the waste land at the rear of our garage.

It's a studio for me, a place where my wife can do her school work, a rumpus room, a center for holiday celebrations, a retreat when the going gets tough in the house and, if need be, a place to put up guests.

What we wanted most of all was isolation. We got it.

The patio house is 44 ft. from the main house, secluded by the foliage of lemon, peach and apricot trees.

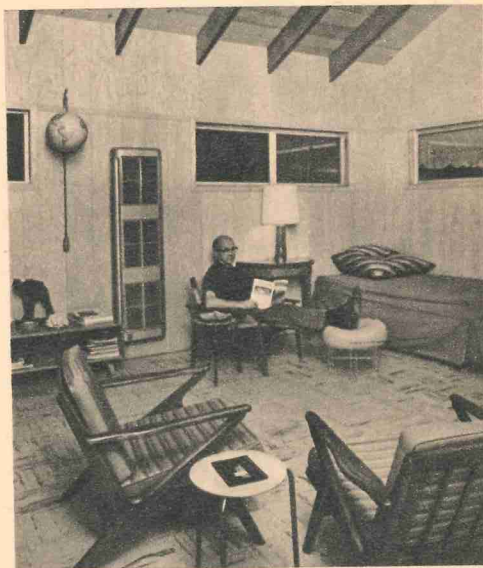
I sketched the design and an architect drew the plans.

The structure is one large room (18x20) with a three-quarter bath. It has an off-center main beam bearing the rafters. The main beam is a 4x12; the rafters, 2x10s. The ceiling is open-beamed.

A patio porch (6x20) facing west



**FRONT ENTRANCE** to patio house shows the sliding-glass doors, tree-shaded approach.

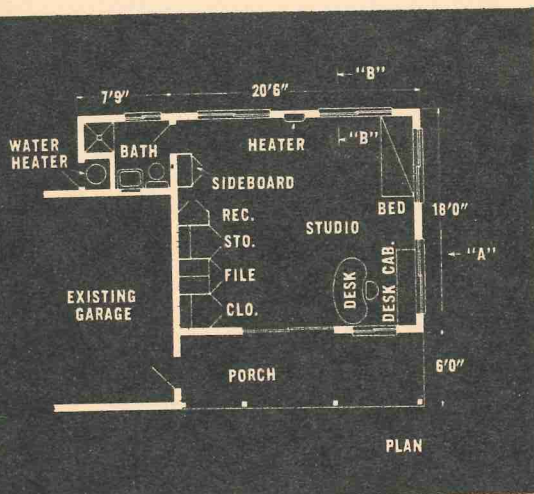


**INTERIOR** is light and spacious. This is southeast corner and studio couch location.

shelters the front from the afternoon sun. The level of the porch is one inch lower than that of the interior floor and slopes a quarter of an inch.

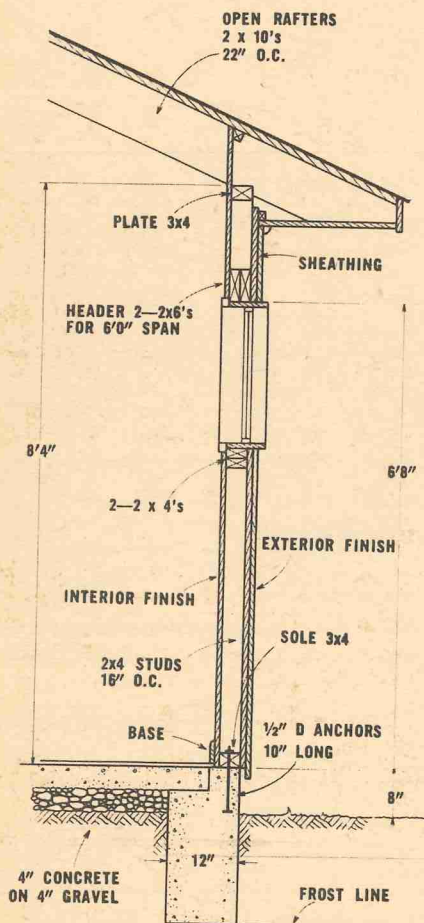
The footings and the main slab took 15 tons (ten cubic yards) of concrete. We poured another two tons for the patio porch.

With only the framing, the main beam and the rafters up, we threw our first party. We strung colorful Japanese lanterns from the rafters, built warming fires in portable barbecue braziers,





**WORKING AREA** includes kidney-shaped desk, cabinet, shelves for reference books.



NOTE: 3 x 4 PLATE & SOLE  
TO BE LAPPED AT CORNERS  
PART SECTION "B-B"

cleared the floor of scrap and lumber and danced to music provided by a hi-fi. And right there, in what looked like a king-size play pen, we served hot casserole dishes, coffee and dessert. It was a fitting inauguration of what the patio house was to be. Our guests loved it.

**Before putting up** the sheathing—tongue-and-groove spruce—we gave it two coats of lacquer. We also power-sanded the beam and rafters and lacquered them twice.

Eight-foot sliding glass doors open onto the patio. There are two 2x6 sliding windows on the south, two on the east and a 36x42-in. sliding window on the west, next to the glass doors.

We finished the shell by stuccoing the exterior.

The room is paneled with seven-foot lengths of pre-finished ash plywood which reach to the top of the 2x6 sliding windows. This left a natural break for a molding between the floor and the ceiling.

The storage cabinet against the north wall is ten feet long, seven feet high and 33 in. deep. It has four sections: a wardrobe, a section for my files, a section for general storage and a unique cabinet for tapes and recordings—unique because it opens from the end, not from the front, and is tailored for recordings and tapes.

To contrast with the wheat finish of the ash paneling, I built the storage cabinet of walnut plywood.

To top the length of the walnut cabinet, I built a shadow box 18 in. high and ten inches deep with five equal boxes painted white. Art objects arranged in each of the boxes on top of the cabinet create a delightful frieze.

The southwest corner of the room, a seven-foot-square area, was reserved for my office-studio.

Against the south wall, I built a desk cabinet, 81x19 and 30 in. high. The top of the cabinet is Formica—aqua flecked with gold. In the middle is a stack of four drawers. On each side are movable storage shelves. Sliding doors neatly



enclose the entire shebang, including the middle stack of drawers. The whole thing is paneled with the same pre-finished ash plywood used on the walls.

To get the most out of the office space, I designed a modern desk 80 in. long and 28 in. at its widest point. It is roughly kidney shaped. I cut a template out of heavy paper, the exact shape I wanted the top to be, and put the desk together with a stack of two drawers on the right. It's all in walnut, matching the big storage cabinet on the opposite side of the room.

This gave me a space of 36 in. between the desk and desk cabinet—an efficient setup when I'm in my swivel chair.

Above the desk cabinet, on the south wall, I installed standards and brackets for three rosewood shelves.

**On the north wall**, east of the storage cabinet, I designed and built a sideboard for commissary purposes. It is 38½ in. high, 34 in. wide and 17½ in. deep. The top is the same gold-flecked aqua Formica used to top the desk cabinet.

In the sideboard are two drawers for cutlery and serving utensils. Behind the double swinging doors there is a system of shelves for dishes and electrical appliances. With water pipes and drain snubbed in here, this is the kitchen area.

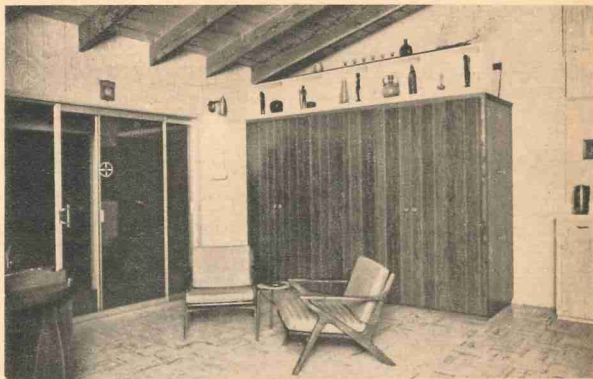
**Over the slab** I laid vinyl-asbestos tile—white mottled with gold—carrying out the light, spacious feeling of the room.

A wall heater keeps the room at a comfortable temperature.

I kept a log on the whole job, noting the expenditure of every penny. On the basis of this experience, we propounded Marquis' law: "When you've finished, you know what you should have known before you started."

**We could have saved** some money—and a lot of work. Yet the entire job cost \$4,655.42. For this we have a complete unit of 528 sq. ft.—beautiful, practical and with no regrets.

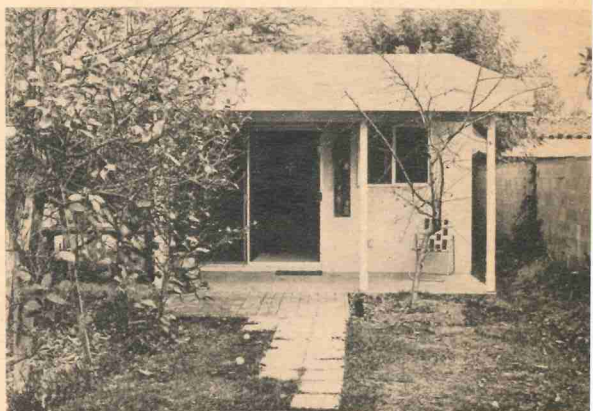
It has already paid for itself many times in the pleasure it has given us. •



**WALNUT STORAGE CABINET** along north wall features shadow box with art objects.



**EAST WALL** shows 2x6 windows, location of heater. Bathroom is through door at left.



**PATIO PORCH OVERHANG** faces west, shelters front of house from the afternoon sun.





A MODERN coffee table that combines both artistic design and functional requirements.

# Decorator's Tile Table

By Roland Cueva

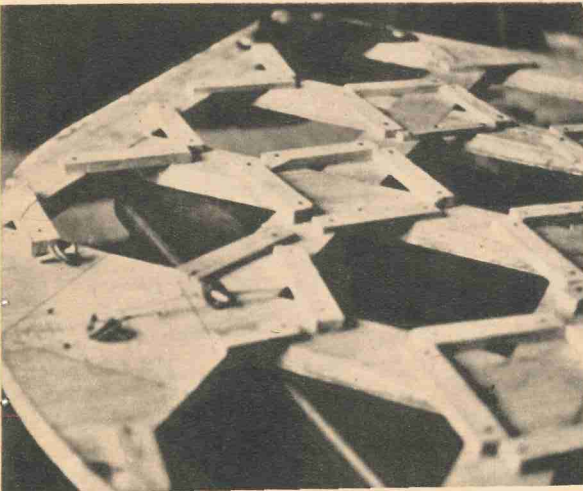
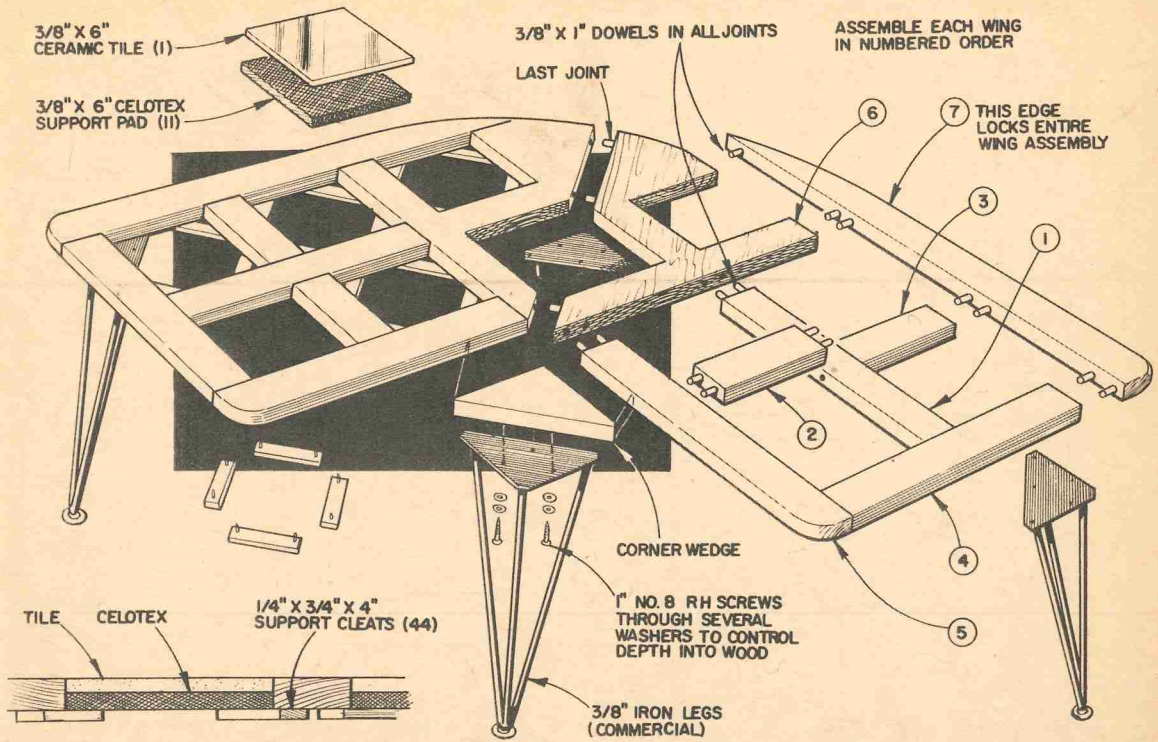
**S**MART STYLING and modern interiors call for furniture having a combination of artistic and proved functional requirements. The lines should be simple and graceful. Supplementary colors, carefully blended materials and sturdy construction will add to the pleasing effect.

The table shown here combines all these features. It was designed to be used with a curved sectional sofa in the

living room but could be adapted to whatever type of sofa or other furniture that happens to be in your home.

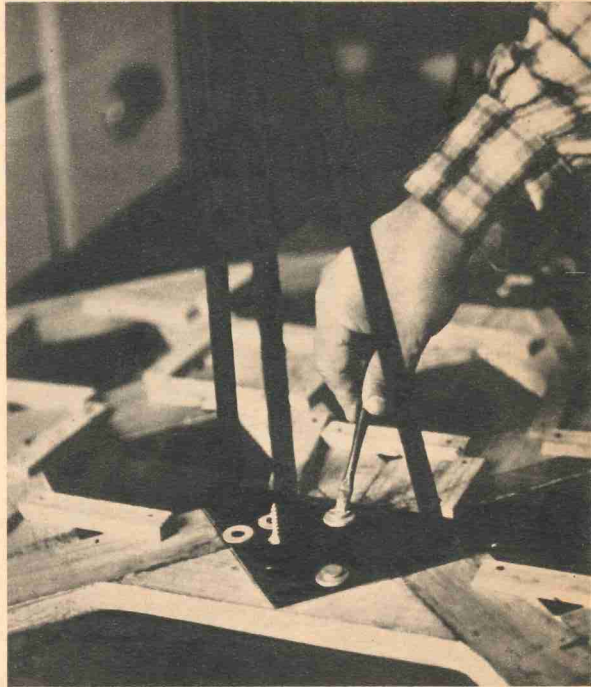
The table was made of ash, which can be finished light or dark to suit your particular taste and decor. However, if you prefer, you could use oak or mahogany. The legs are of black iron in tripod style. They may be obtained in any hardware store carrying Stanley products.



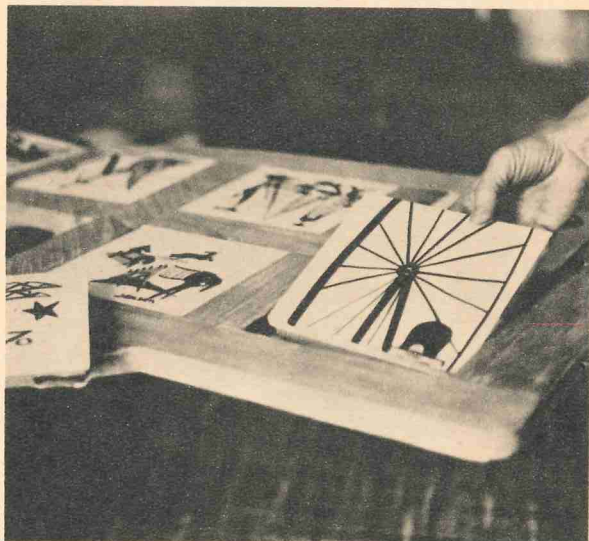
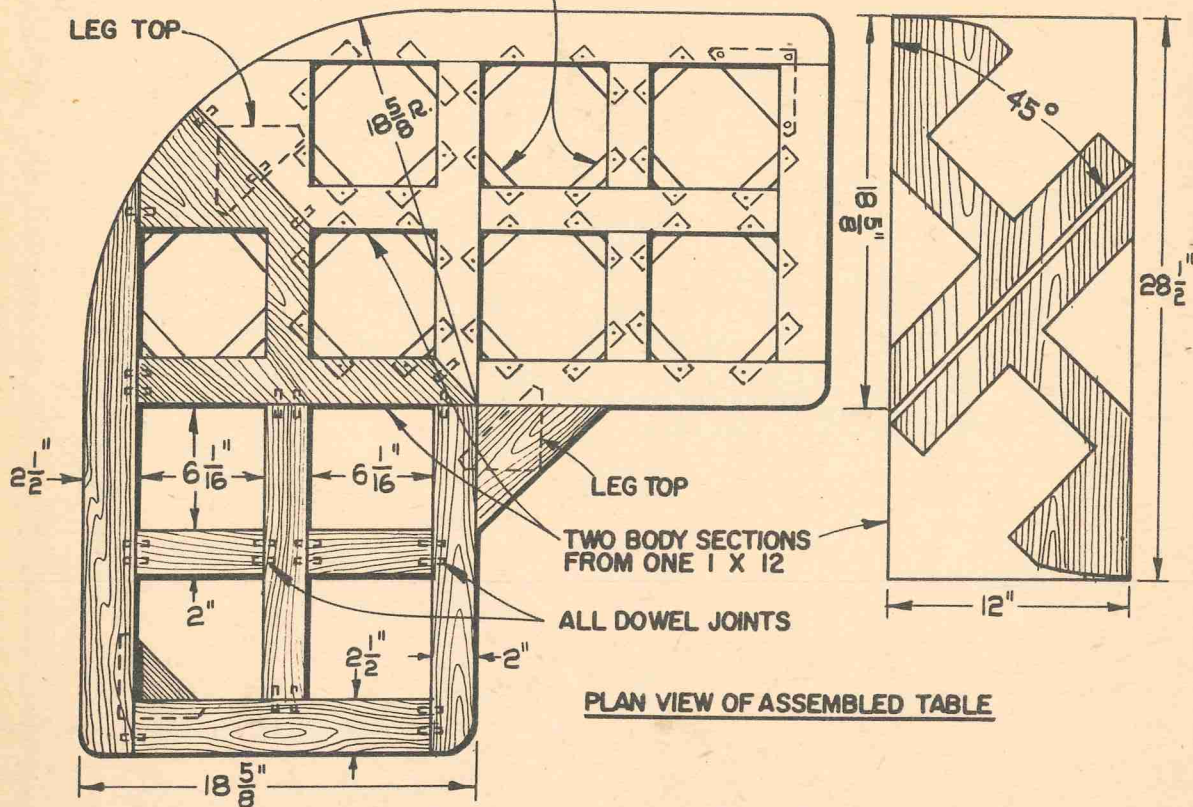


ON THE UNDERSIDE of the openings in which tiles will be set are strips of wood, fastened across corners at a 45 degree angle.

THE BLACK-enameled metal legs are store bought. They are attached to triangular bases that are screwed to the table frame.



# LOCATE BLOCK TO SUPPORT TILES ADEQUATELY (44)



THE TOP of the table consists of an outer frame with eleven openings in which standard six-inch ceramic tiles are set. Originality can be stressed by painting individual drawings on each tile. For those familiar with ceramics, paintings can be baked into tiles.





**BASED** on three legs, the table will not wobble. Furthermore, its free form allows it to be used with various furniture pieces, and tiles are not only waterproof, but take heat.

The table top consists of an outer frame, doweled to inner sections, with eleven openings to hold standard six-inch ceramic tiles of your own selection. The tiles in this particular table were painted by an artist in Laguna Beach, California. The choice of tiles of course is up to the individual home craftsman. On the underside of the openings in which the tiles will set are strips of wood,  $\frac{1}{4} \times \frac{3}{4} \times 4$  inches, fastened across the corners at 45 degree angles to support the tiles. The tiles are set on pieces of Celotex cut to the same size as the tiles themselves. The legs, with their triangular bases, are attached to the underside of the table frame with round-head wood screws.

The drawings and photographs illus-

trate accurately the construction of the table, including dimensions. Use Weldwood glue in all joints and use bar clamps when assembling the parts of the table. Assemble it on a flat surface such as a workbench top, because if the table is not absolutely flat in all directions the tiles will not fit accurately in the openings. Tools required to build this table are basic. If you have a bandsaw or circular saw the job may be done with either tool. If you do not have power tool equipment use a rip saw or crosscut saw to cut the straight pieces, and a coping saw for the curve.

A careful study of the drawings and photographs should make this an easy and pleasurable project from your home workshop for any room in the home. •

# ONE-PIECE DESK

*Our typing desk made from a single sheet of plywood is far more functional than any store-bought stand.*



**By John E. Turner**

**I**T TAKES only one 4x8-ft. piece of  $\frac{3}{4}$ -in plywood and about four hours of your time to construct this typing desk. Designed with economy and simplicity of construction in mind, all joints are assembled with nails—the easy way.

Far more functional than any typing table you might purchase from an office supply store, MI's desk has space for books, stationery, file folders and related items. What's more, it *looks* like a desk.

**Before you lay out your plywood sheet, make some preliminary measure-**

ments to be sure the knee clearance will be adequate for you. There is enough material available so that you could add another inch or so to the height if necessary. However, if you're planning to use the desk primarily for typing, we recommend that you keep it low.

Begin construction by sawing out the eight pieces as indicated on the cutting plan. Your saw blade should be sharp to avoid splintering the edges of the wood. Care here not only will improve the appearance of the desk but minimize the need for sanding.

After you have all the pieces cut out, assemble with six-penny finishing nails.







# SLAT BENCH

By Richard E. Londgren

**T**WO for the money. That's what you get with this handsome piece of functional furniture. As a coffee table, its simple lines and rich wood will enhance any living room. Add a brightly colored pillow or two and—presto—it becomes a sturdy bench seat.

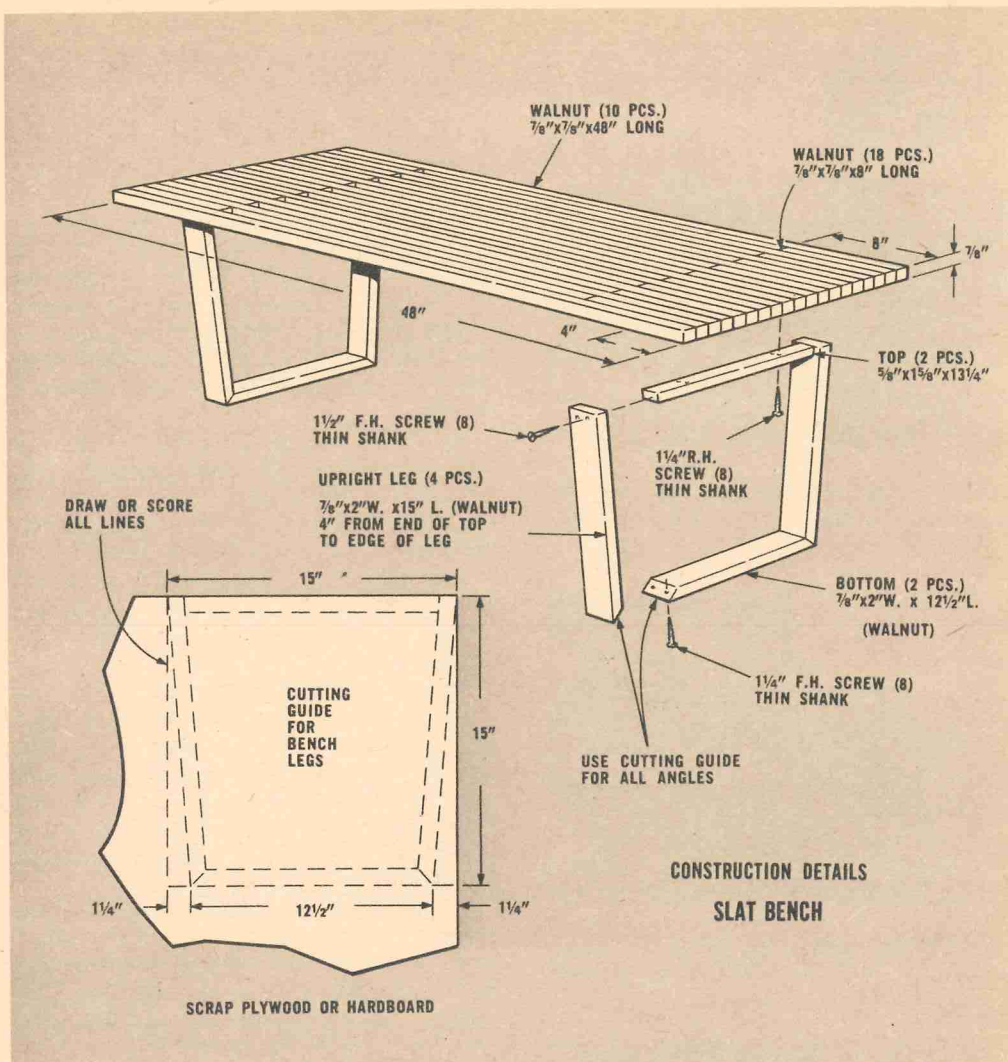
Or, if you don't cotton to the idea of one piece of furniture doing double duty, make everything in duplicate as

you build. When you're finished, you'll have both a coffee table *and* a bench.

**The design** is quite simple. Alternating long and short strips of  $\frac{7}{8}$ -in.-square lumber are glued together to make a top that is solid at the ends and slatted through the center. The two leg units, identical trapezoids, are screwed to the underside of the solid, laminated ends.

For the slat bench shown, the top was made from ten four-foot and 18 eight-inch walnut strips with the slats placed





intentionally for strong contrast between the light and dark grain of the wood. Other types of lumber can be used, with hardwoods preferred. Adjust the dimensions of the bench to your needs and select lumber that is straight and well-planed when you purchase it.

For the leg units, choose the same wood you use for the top, in two-inch width. The vertical members are 15 in. long; the bottom piece, 12 1/2 in. The top member, which will not be visible in the finished bench, can be fir or pine. It is 13 1/4 in. long.

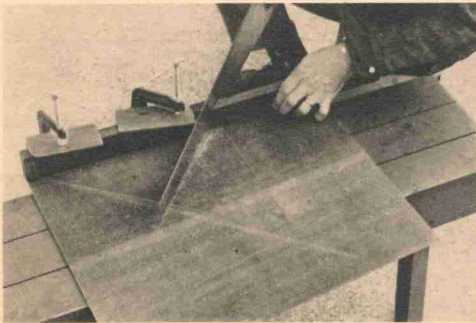
Other materials needed are plastic

resin or epoxy glue, eight 1 1/4-in. flat-head wood screws, eight 1 3/4-in. flathead wood screws and eight 1 1/4-in. round-head wood screws. All screws should be thin-shanked (No. 8 or smaller). Hand tools are adequate for this job, though power tools will make the work easier.

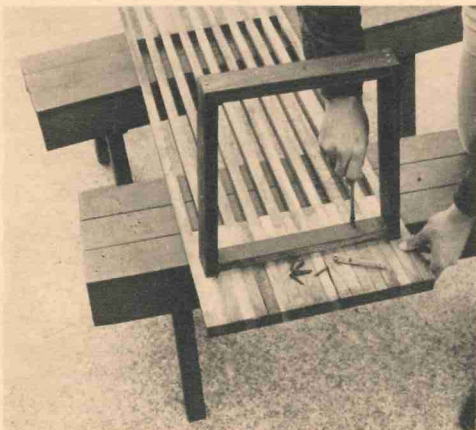
For the top, cut the strips into the lengths you need. Sand all ends and, if needed, sand the faces of the strips. Then, using pipe or bar clamps, laminate the pieces of the top with plastic resin or epoxy glue. Align and square the top as you clamp, cleaning off any excess glue. Allow to dry thoroughly, as di-



**CLAMP** glued top together, aligning all the pieces carefully. Check with a square.



**IMPROVISED** cutting jig comes in handy for mitering and assembling the leg units.



**SECURE** each leg unit to the bench top with four 1 1/4-in. roundhead wood screws.

rected, before removing the clamps.

The most challenging part in building the slat bench is cutting the angles for the joints of the trapezoid leg units. If you have a miter box or a power saw with a miter gauge, adjust to the required angle (see drawing) and make your cuts. If you lack mitering equipment, improvise a cutting guide. Using a scrap piece of hardboard or plywood at least 15 in. square, mark it as shown in the drawing. Clamp the leg pieces to the board with C-clamps padded with wood scraps and then saw the necessary angles.

With the various members of the leg units cut to length and mitered, drill and countersink pilot holes for screw attachment. If you prefer doweled joints, drill holes for quarter-inch dowels.

The sawing jig can be used as an aid to drilling and also in assembling the leg units. Fasten all corners with glue and screws.

When the glue has dried, align the leg units on the underside of the top, four inches in from each end. Drill four holes through the top member of each leg unit for the roundhead screws used for fastening the leg units to the top. Drill matching pilot holes in the underside of the bench top.

Before mounting the leg units, do final sanding of any sharp edges or other parts in need of smoothing. Then screw-fasten the leg units to the top. To make future dismantling easy, do not glue the leg units to the bench top.

The bench shown here has a non-glossy finish of clear sealer, but you could use wax, oil, clear varnish or lacquer. Select a finish suitable to the wood you use. Clean the bench with a cloth dampened in paint thinner before you apply the finish.

When the finish dries, sit on or beside your new furniture and have the wife bring you a well-deserved cup of coffee!

While you're sitting there, you might give some thought to your next project: an end table—or a pair of end tables—to go with the slat bench. These would be of similar design and construction, with laminated, slatted tops and trapezoid legs. •



# Cedar Closet

**D**ON'T LET your attic become a refuge for outdated and unused articles. Even if it's too small or inadequate to convert into living space, it can be put to good use for storage purposes. Shelves can be built and other provisions made for the orderly storage of out-of-season clothing, woolens and furs.

For the latter, a cedar closet is recommended, one which can be built into almost any attic, regardless of size or shape. Even sloping roofs and sharp corners are no barriers to the construction of a storage closet of this kind. Actually, many attics already have studs in place. Regardless, it's a fairly simple job to frame out an area with 2x2's, and then line it with aromatic red cedar lining to make it moth-repellent. The unique wood has a natural aroma which is pleasant to humans, but repugnant to moths. Clothing, woolens and furs thus are protected against moth damage when stored in these surroundings.

The cedar lining comes in prepackaged bundles (enough in each bundle to cover 32 square feet) and is nailed right over the open framing. No special backing is required. Cedar material for an average size closet would run about \$50. The investment in time and money will pay good dividends should you sell your house, inasmuch as consumer surveys show that cedar closets are among the features women want most in new homes.

Cedar lining is applied horizontally, working from the floor up. Each piece is tongue-and-grooved along the edges and at each end to simplify fitting and to provide sturdy installation. The first piece is placed in a corner, with groove edge down and groove end next to the corner. The tongue end fits into the groove end of the next piece. Joints need not occur at the studs since the tongue-and-groove design will hold the pieces



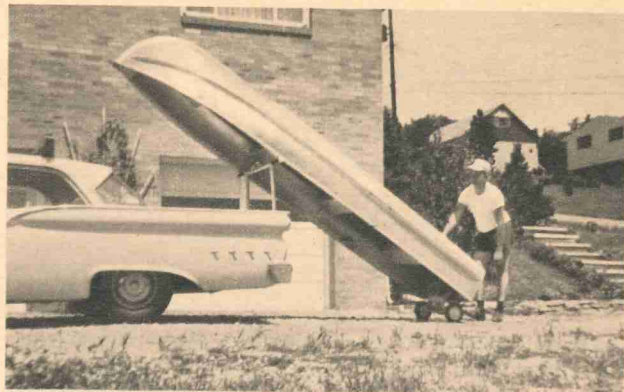
**ATTIC SPACE** can be converted to moth repellent storage area for all out-of-season clothing. Cedar closet can be built into almost any attic, regardless of size or shape.

securely in place. Nail (use 4-penny finishing nails) on the face of a strip rather than the tongue to avoid splitting.

In applying the next row, tap the piece lightly along the top edge to make sure it fits tightly before nailing. If the pieces for several rows are laid out and cut in advance, it will speed up the job and help to assure an attractive arrangement of end joints. In cutting the last piece for each row, be sure to saw the tongue end.

Quarter-round cedar moldings are also available. By using molding, you won't have to be too precise in lining up the corners. Use 6-penny finishing nails on the molding. To get maximum benefit from the cedar, it would be wise to cover the ceiling, floor and the back of the door with cedar. Do not finish. To do so would seal in the aroma. •





# CAR-TOP BOAT LOADER

*Craft weighing up to 200 pounds can be handled by one man with this useful device.*

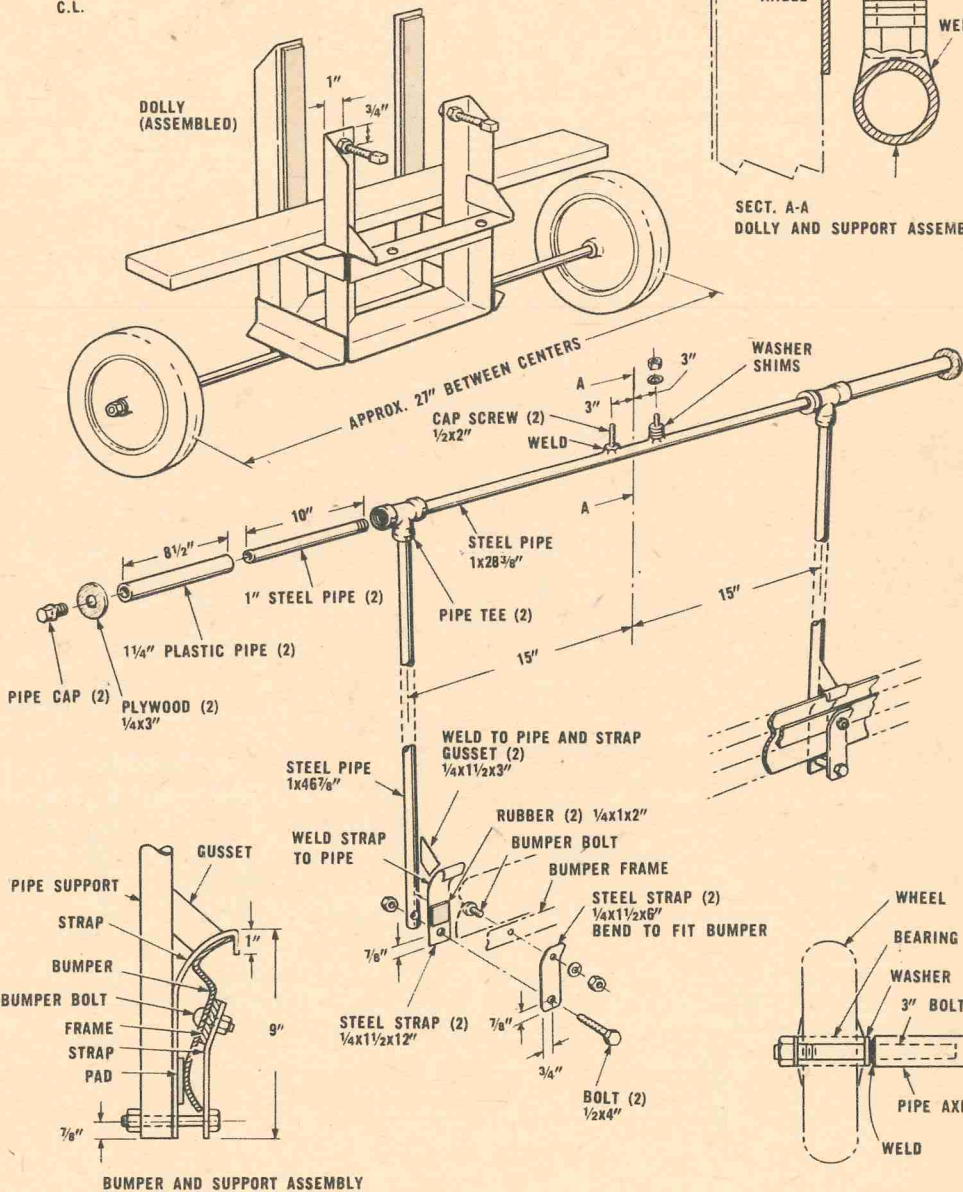
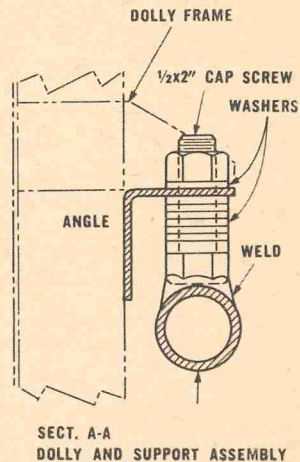
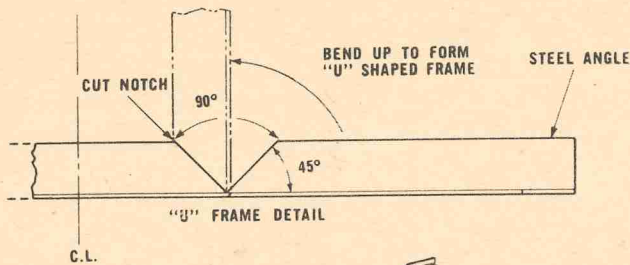
By Robert J. Chilko

**Y**OU don't have to live at the water's edge to enjoy boating. Not if you have a car-top boat loader which enables you to load, unload and launch craft weighing up to 200 pounds with no strain. Owners who find it inconvenient to leave their small boats on or near the water will discover in this project the answer to one of boating's biggest problems.

The car-top loader includes a two-wheel dolly which clamps to the boat's transom, a support assembly which clamps to the rear bumper of the car, and one or two standard, gutter-clamped roof carriers. The dolly is especially useful where there are no prepared launching sites and where the car can't be driven up to the water's edge.

Modifications in the bumper attachment and the height of the support will depend on the make and model of your car. The beam of the boat determines the [Text continued on page 46]





width of the support assembly. The bumper attachment, which is secured by two half-inch bolts, is removable. The brackets which are attached to the underside of the bumper, using the existing bumper bolts, can be left permanently in place.

The bumper support is mostly one-inch steel pipe which was purchased cut to length and threaded. The steel bumper straps were formed by using a heavy hammer and an anvil. These straps can be shaped by trial and error until they conform to the contour of your car's bumper.

The boat is locked in place by engaging two cap-screw studs on the horizontal support member with matching holes in the dolly assembly, the design

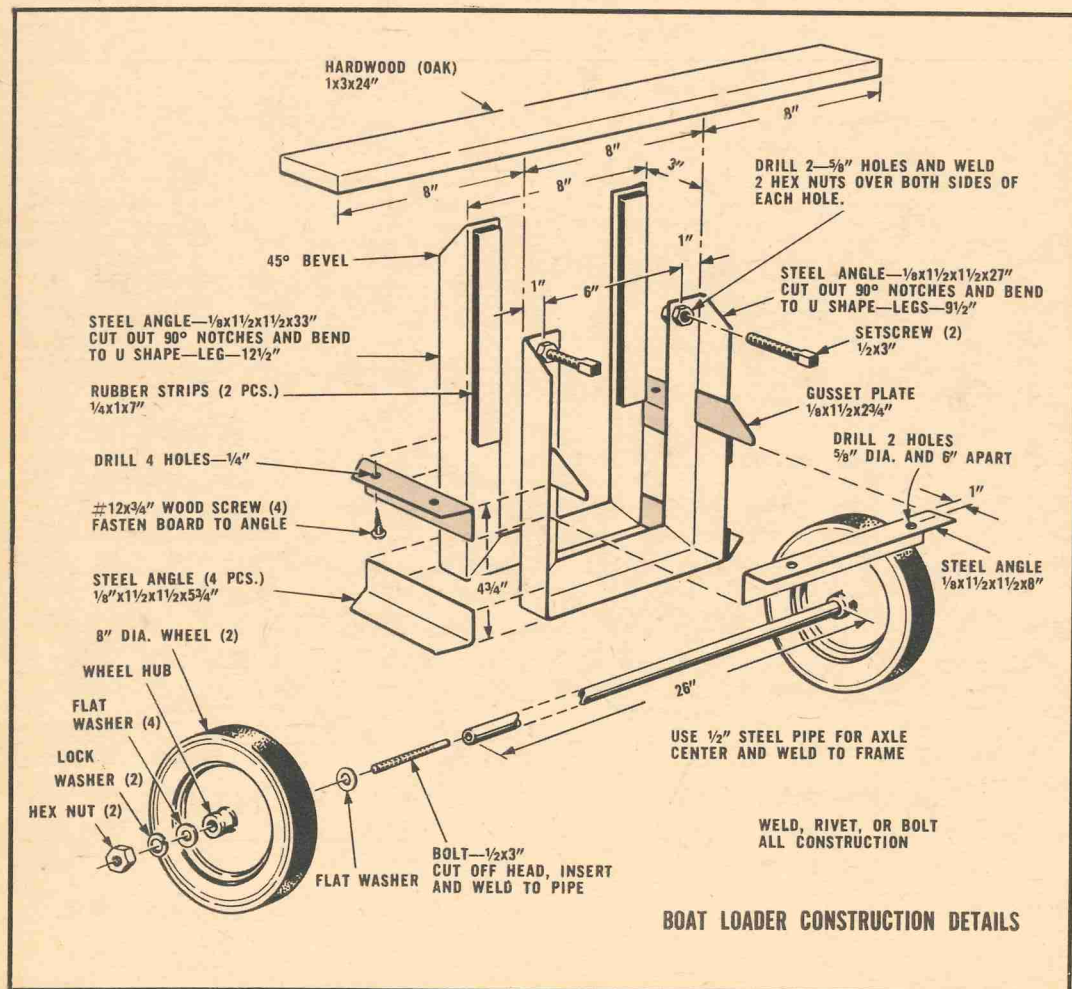
of which permits welded, riveted or bolted construction.

With the bumper support in place, the loading sequence is as follows:

The boat, with the dolly clamped to the transom, is wheeled into position behind the car and the prow is placed on the support so that the gunwales rest on the plastic-sheathed pipe ends.

The boat is then pushed from the stern and raised until it is balanced on the support. A slight shove overbalances the boat and allows the prow to drop and rest on the roof carrier(s).

The boat is then shoved forward and lifted just enough to engage the two cap-screw studs. Nuts are screwed on the studs, the roof carrier straps are fastened and you're ready to roll. •





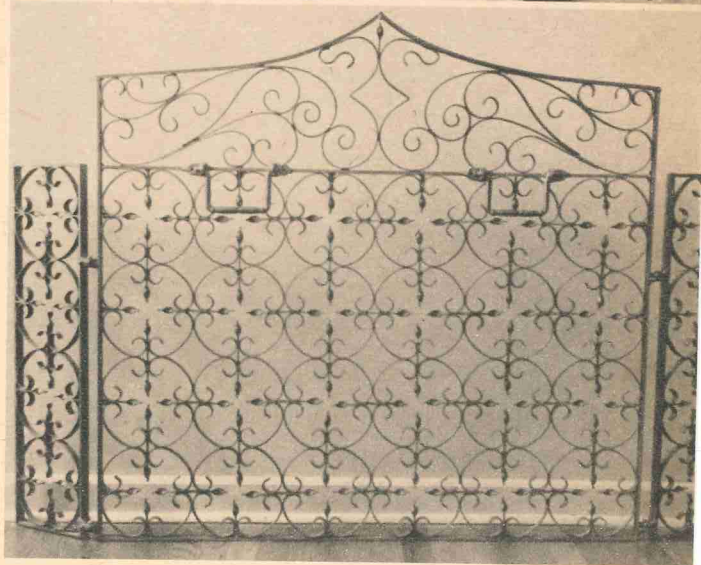
# WROUGHT IRON FOR THE HOME BLACKSMITH

*The technique is easy—and the price is right. You, too, can be a home blacksmith!*

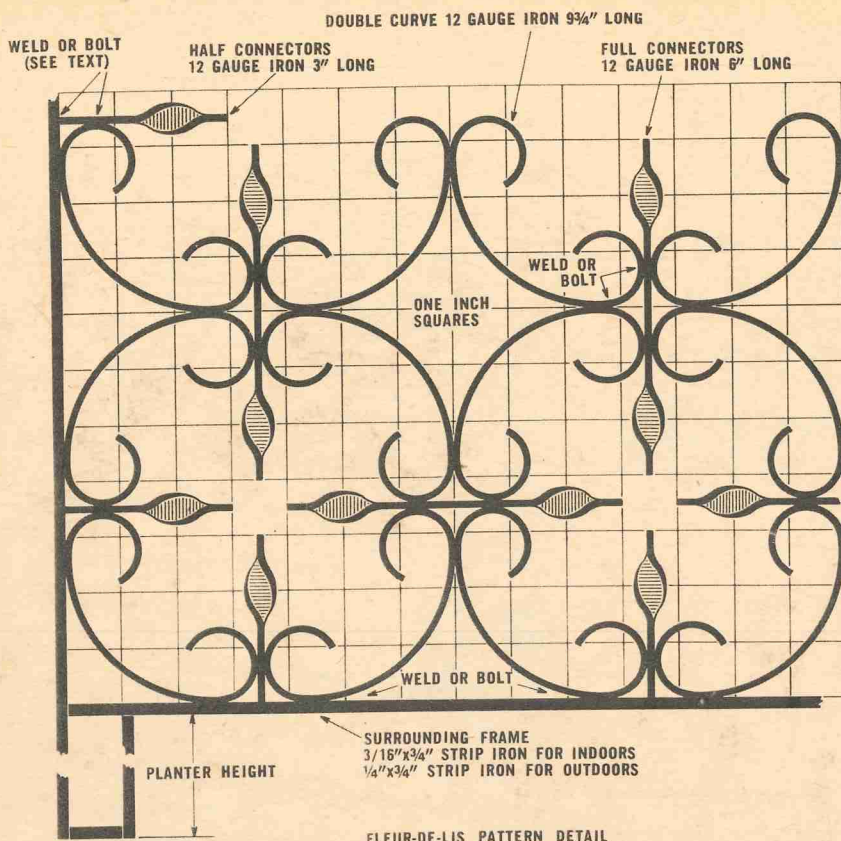
By Robert C. Tremain

**I**F you've admired the beautiful lace-like wrought-iron work decorating the balconies of the French Quarter in New Orleans, you can stop looking and make your own! The two scrollwork pieces on this page were done with a simple technique requiring only a drill, vise, hack saw and wrench.

The basic design is the historic fleur-de-lis pattern arranged in circular sections. Each section is formed from half-inch-wide strips of 12-gauge iron. Only three shapes are required: a double curve, bent from a strip  $9\frac{3}{4}$  inches long; a half-connector, three inches long and a six-inch full connector. The half-connectors tie the sections to the surrounding frame and the full connectors join each section



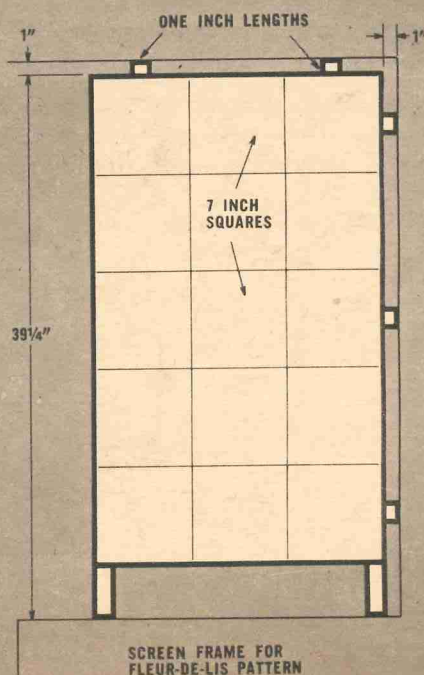
DECORATIVE fireplace panel 60 in. long by 40 in. high is constructed from a basic fleur-de-lis pattern.



to the adjoining sections on each side.

The double curves are formed by bending the stock around a jig made from hardwood. A 180° twist makes the connectors. The screen divider project consists of an area five sections by three sections, with an open area to hold a planter. Each section measures seven by seven inches, but the size may be varied by increasing or decreasing the length of the strips.

The first step, after you have decided on your project, is to cut enough of the 12-gauge iron strips to produce one section. Bend the pieces and fit them together to see that the bends were made correctly. At first try they probably won't fit exactly, but by gently compressing the double curve, if too large, or opening it slightly if too small, the pieces can be made to fit. Next, cut the frame strips and weld them together. If



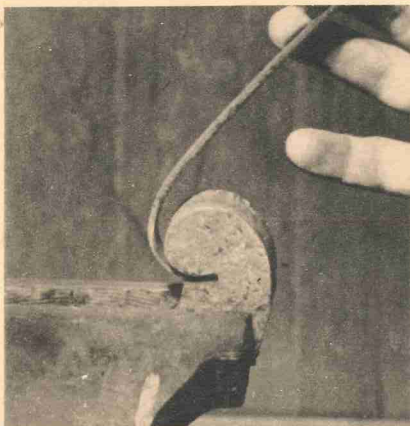


you do not have welding equipment, there are two choices open to you. You can lay the entire arrangement on a piece of sheet rock and take it to the local welding shop, or you can drill and tap holes in the metal and use machine bolts (or use nuts instead of tapping.).

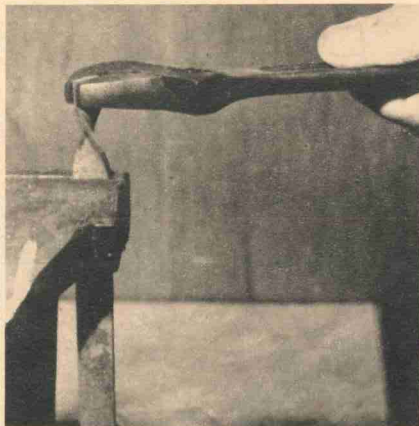
The finished frame is laid on some non-combustible surface, with the area within the frame marked off into

squares, each the size of one section. In this way the entire unit is laid out uniformly. If you are welding, weld both sides for extra strength.

**The final step** is to wire-brush, knocking off any flux on the piece. Then spray paint it with the color of your choice. You're now the proud owner of a modern antique and you've become a real home blacksmith. •



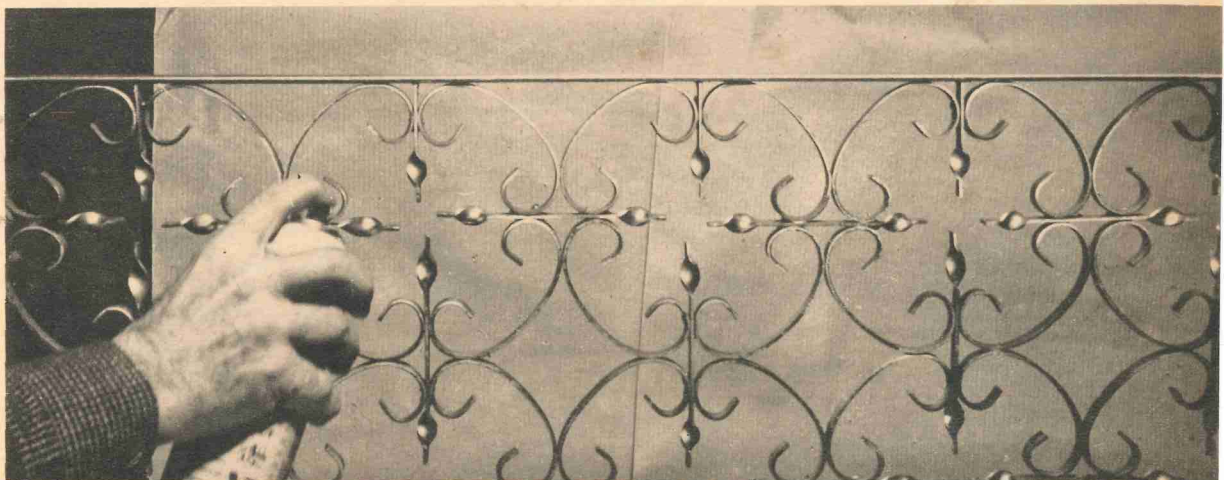
**THE ENDS** of the double-curved pieces are shaped in a jig. The jig can be made of hardwood, should be held firmly in a vise while you work, as above.



**CONNECTORS** and half-connectors are formed easily by holding them in a vise and firmly but gently twisting the end 180° with a wrench. Full connectors should be twisted in alternate directions.



**AFTER** the frame is welded together, the screen sections are laid out as they finally will appear. Each section is set into a square drawn to size on the board.



**WHEN** the welding is finished, wire-brush the screen and paint in your favorite color.

# Teen-Age Vanity Table

By Henry Clark

**R**ARELY does a family man, father of several children, realize that time is rapidly moving by. He lives complacently, satisfied with his lot, idol of his adoring children. But suddenly, he is brought to reality when his oldest girl demands a place for her "jewelry" and especially some place to store her make-up kit.

Unless you have money to burn and the time to shop for an appropriate piece

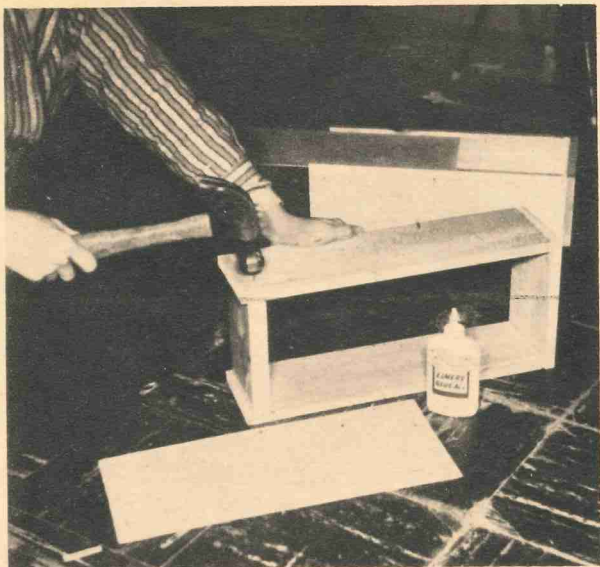
of furniture, it is best to make the dressing table in the home workshop. You will satisfy your teen-aged girl by having her help design the project, and to fit it perfectly, as far as dimensions go, to the area she selects in her room. Doing it yourself will not only make it more economical, but will also enable you to custom-make the vanity table to fit the decor of the girl's room.

In rough drawings and final design it

Young girls must have a private dressing table for their use, and for private effects.



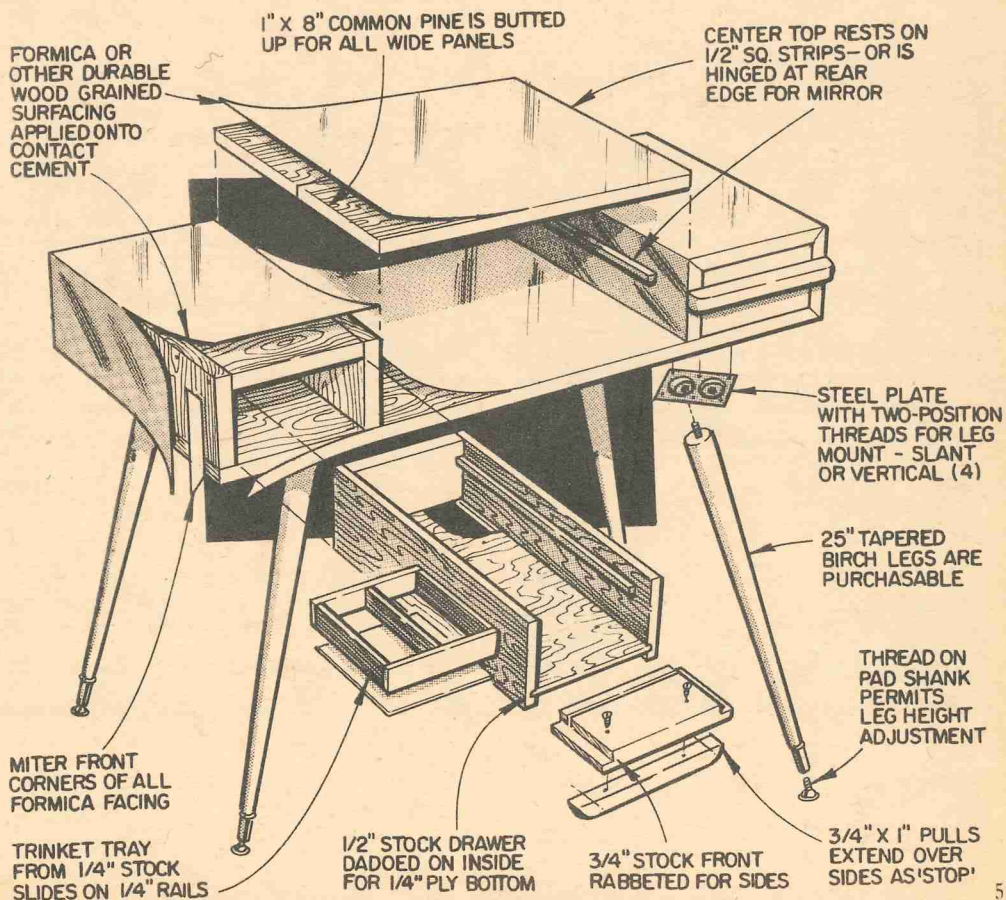


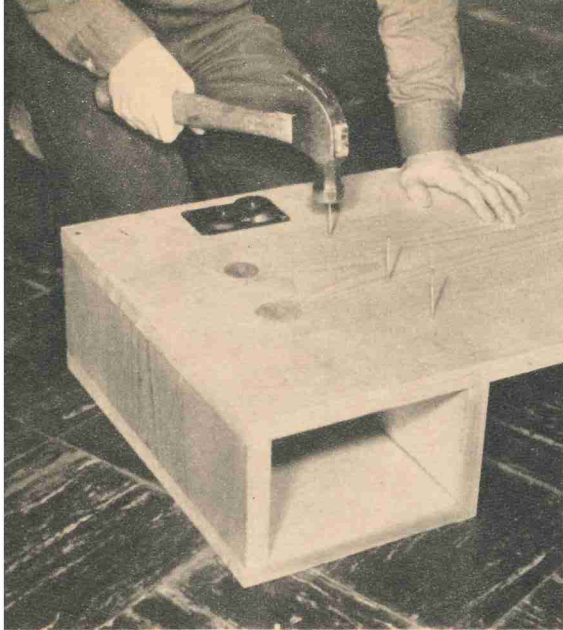


**DRAWERS**, one for each side of the vanity table, are butted, glued and nailed using finishing nails. For details see drawings.



**METAL** leg brackets have dual placements for legs, depending on angle required to clear the table from impeding wall or furniture.





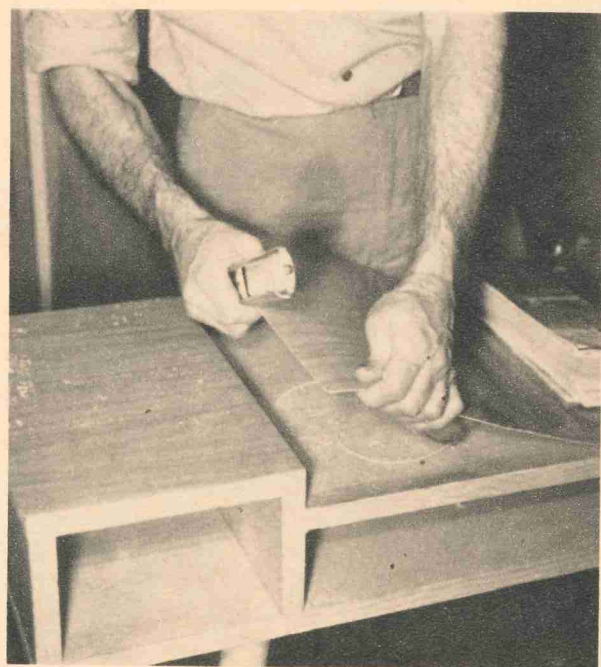
**BOTTOM** of the table is nailed into drawer. Rear bracket is placed parallel to the rear edge of table to permit legs to clear wall.



**LEGS ARE** store-bought tapered birch that screw into steel plates. Note front plate is at an angle to give legs better balance.

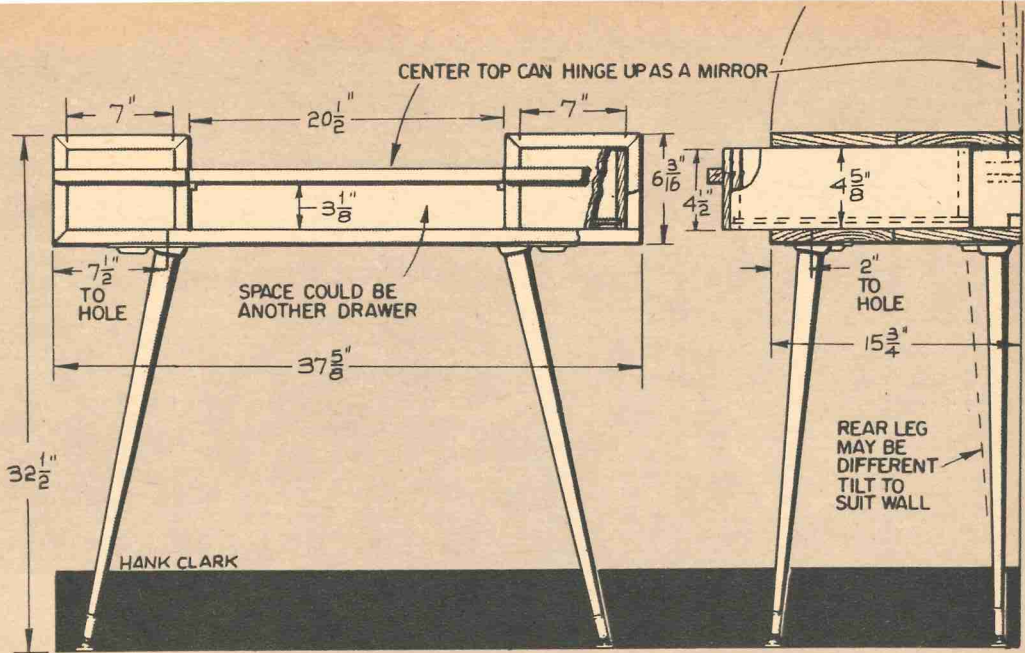


**CENTER TOP** rests on wood strips nailed and glued to the sides. Strips are positioned to allow ample space for current magazines.



**FORMICA** in a plain or wood-grained surface covers all areas of the vanity table except legs. Apply carefully onto contact cement.





was agreed that a lot of top area was needed. A mirror could either be hung on the wall, centered over the dressing table, or the rear of the table top could be hinged for a mirror. A center area, under the top, can remain open for the latest magazines. It was decided that two drawers would box in the table, one on either side. One drawer should have a shallow tray, sliding back and forth on rails, for "jewels" and other keepsakes. The other drawer should have a lock, for personal letters and diary.

Construction is of common shelving pine, surfaced with Formica or any material convenient to the area. The bottom surface of the table should be one large board to which the other sections could be attached. The drawer cases should be nailed and glued, one on each side, on top of this board, separated by the actual table top.

A cross-cut saw does most of the job. Half-inch select pine was used for drawers, dadoed for 1/4-inch bottoms. The drawer fronts are rabbeted to take the sides. The pulls are made of the same stock as the center top so that they blend all together from the front view. The one line makes it simple in design, and attractive. Furthermore, the handle pulls are extended to lap the sides of the table

so that they also act as drawer stops.

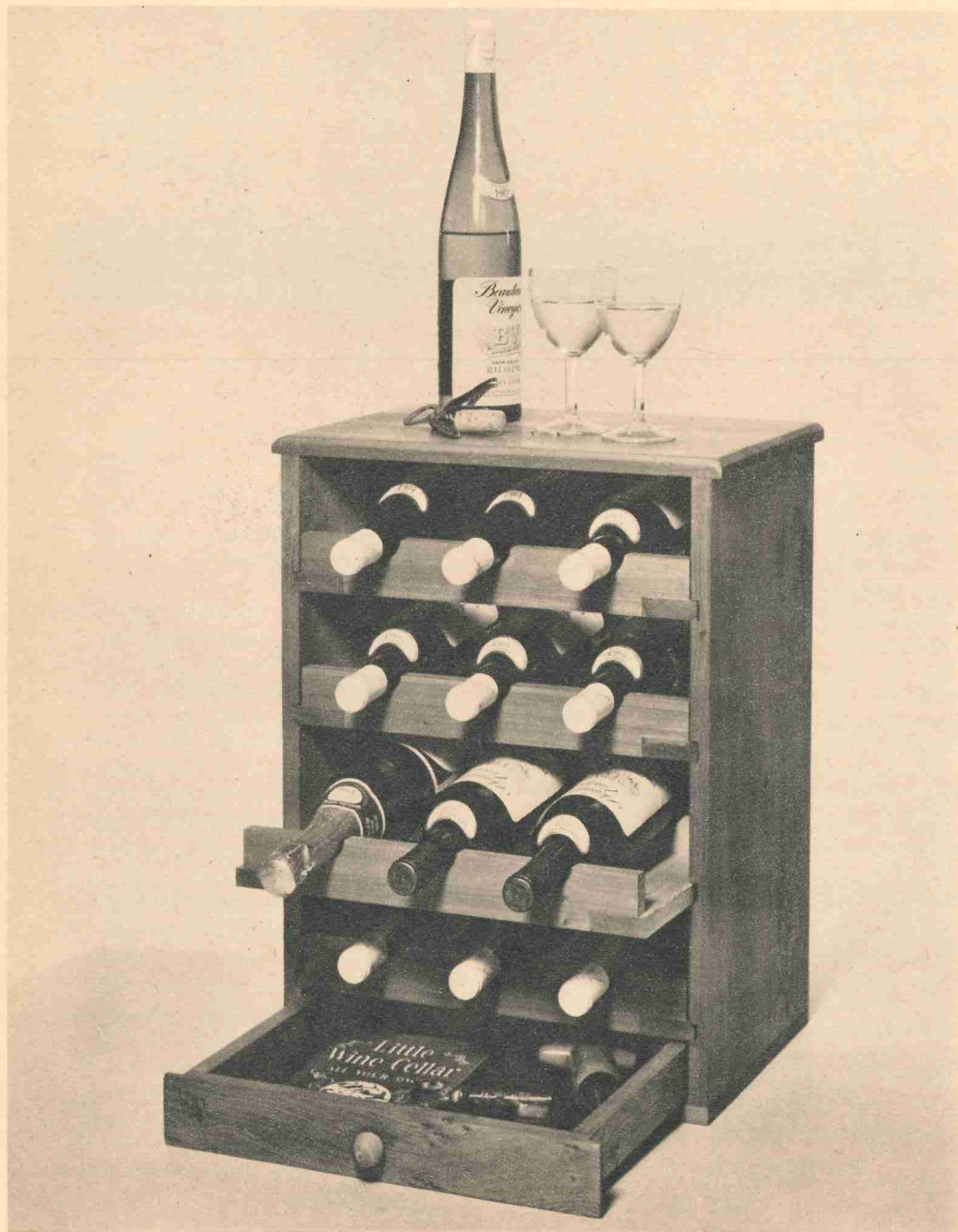
Fit the drawers in the "box" areas before the final gluing, to be sure there is freedom for sliding. Two 1/4-inch rails are nailed and glued to one drawer to allow the small jewel tray to slide back and forth.

The legs are store-bought tapered birch, with brass turnings at the bottom. Threaded pads turn in and out to allow for uneven floors, and they are also on a ball joint to pivot to a flat surface.

As for the Formica, the usual treatment is called for, here. Cut paper blanks for the areas to cover and trace these patterns on the back of the Formica. Cut with a saber saw, using a fine blade. When all pieces are cut, comb or brush on the adhesive as directed by the manufacturer; wait until it is tacky. Place a slip sheet (heavy paper) on the adhesive and line up one corner and edge of the Formica over it. When lined up correctly, slide out the paper gently, and as you do so, keep pressing the Formica down until the entire area is covered. Trim any overhang with a Stanley Surform or an ordinary plane. Trim all parts made of Formica, or use matching Weldwood edge-grain strips with contact cement. •

# TOTABLE WINE CELLAR

LITERALLY speaking, a wine cellar may be a cellar for storing wine in bulk or it may be an attractive cabinet in which you can store your own private supply. This free-standing unit, which can do double-duty as an occasional table, is made of California redwood, a traditional wine wood used for wine vats and storage tanks.



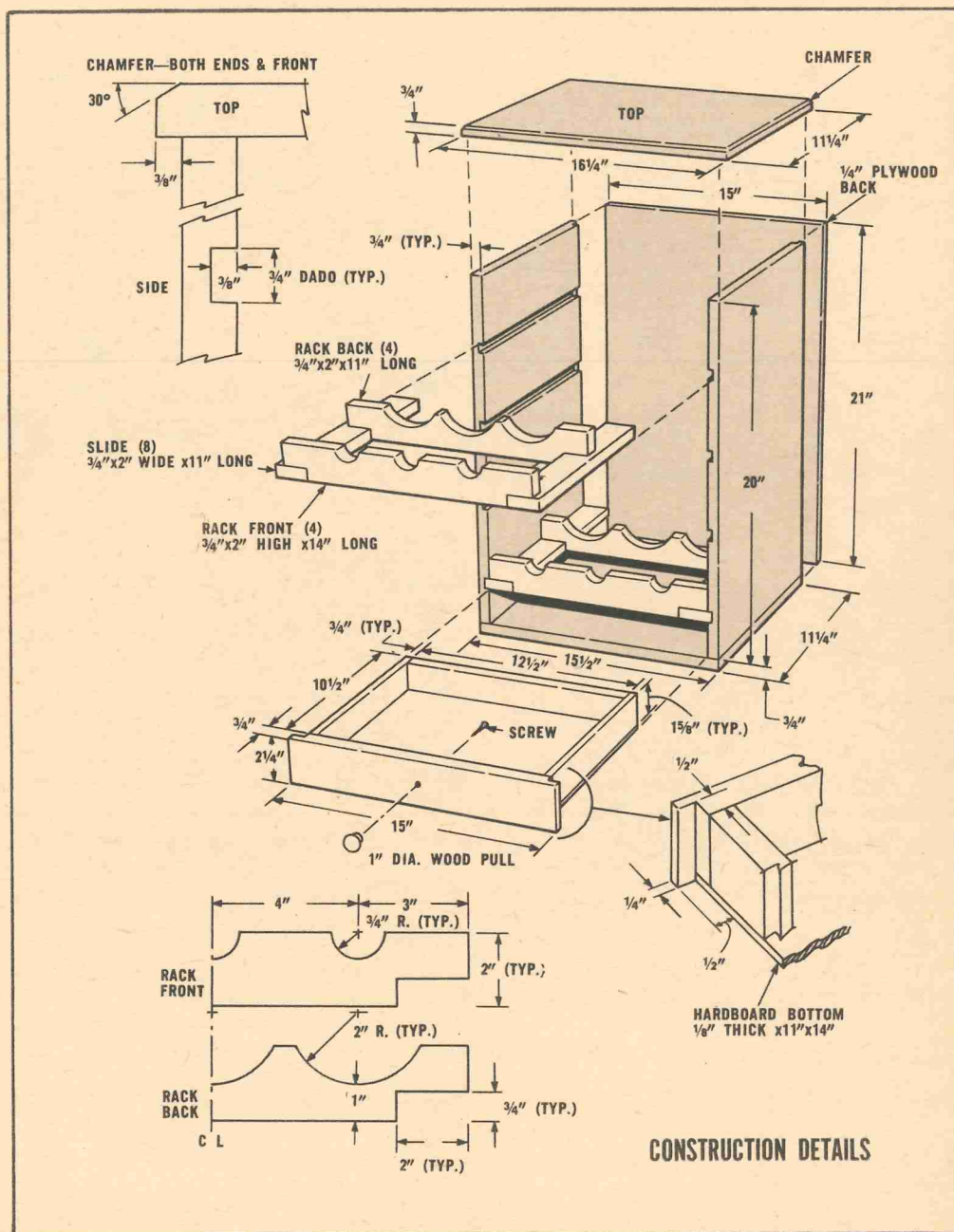


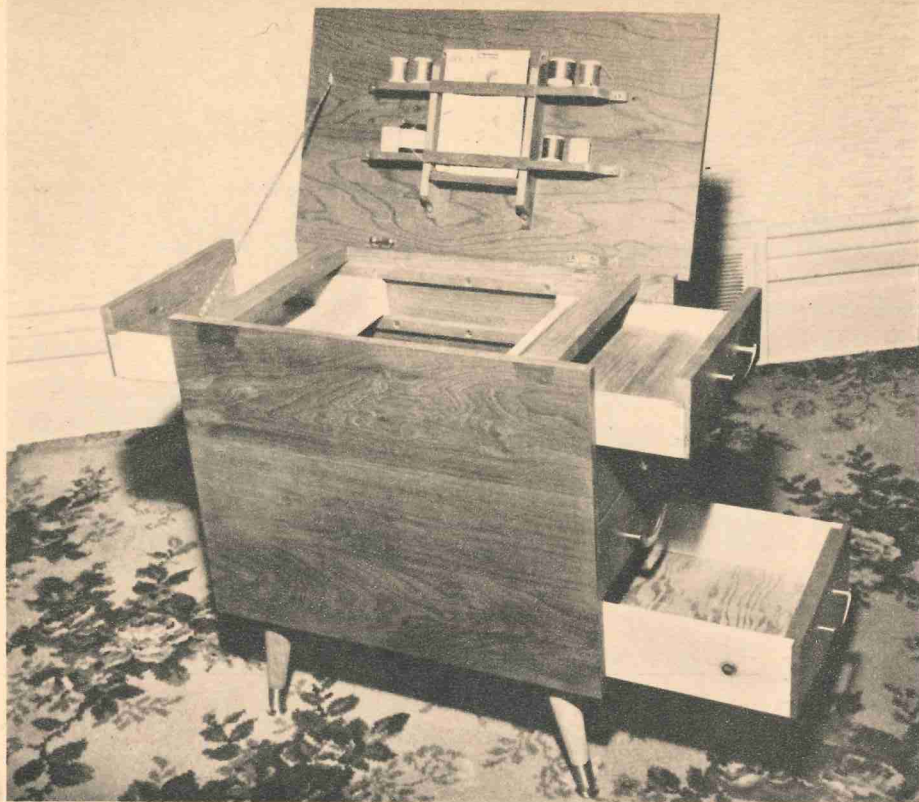
As a built-in, sans back, top and bottom, the idea of the unit can easily be incorporated into an existing cabinet, bar or closet. The basic dimensions may be altered to suit your own particular requirements.

Assembly is with butt joints, glue and

finishing nails. Set all nail heads and fill the holes with wood putty.

To bring out the natural beauty of the wood, use several coats of clear sealer, sanding lightly between coats. Rub very lightly with fine steel wool, apply paste wax and rub to a polish. •





# End Table Sewing Box

C. L. Widdecombe

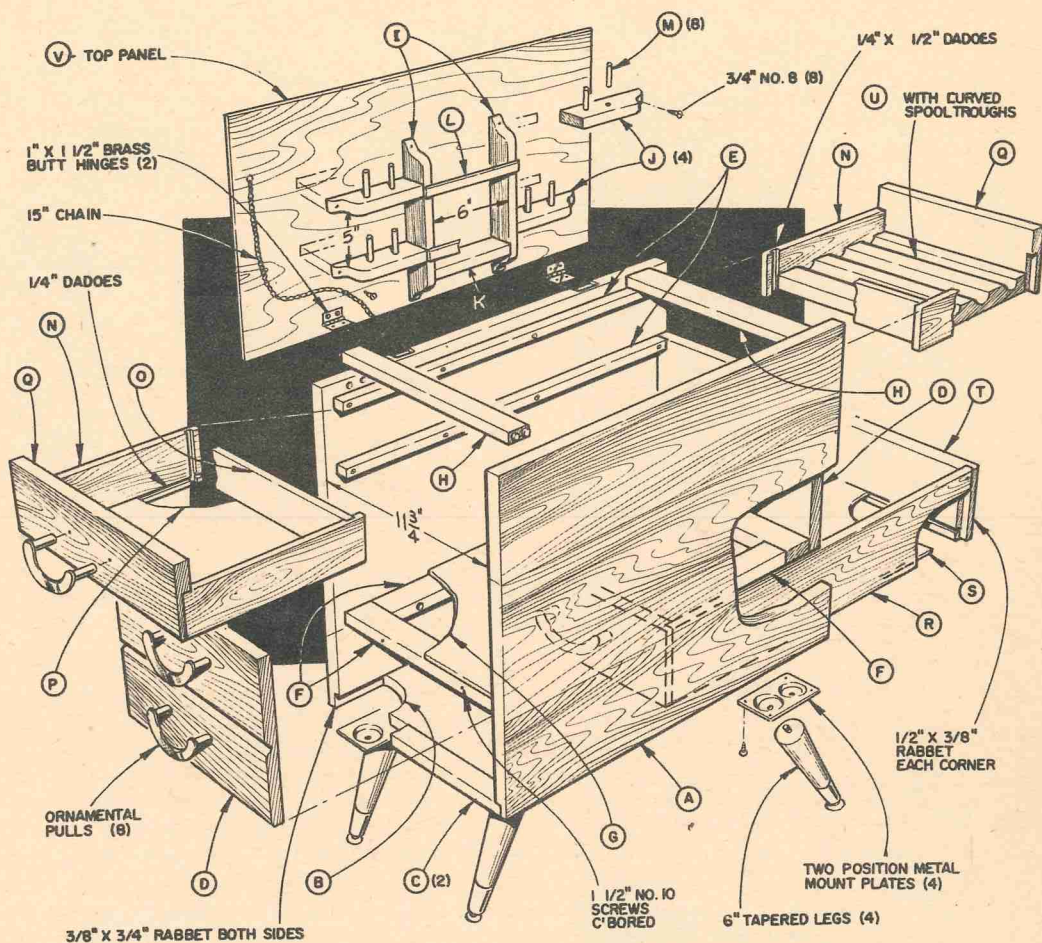
**C**ONSTRUCTED from the finer cabinet woods such as walnut, cherry or mahogany, this project does double duty serving as an end table when not being used as a sewing box. Finish is left to the choice of the individual craftsman. Fine wood should be stained and lacquered. Copper-toned handles and brass-tipped legs would make an interesting contrast.

If solid stock is used, two boards will have to be glued to make the required width—sides 16 x 21 inches, and the top 13 $\frac{3}{4}$  x 23 inches. When this has been



**END TABLE** shown above opens into sewing box in the lead photo at the top. This well designed unit has many drawers, hinged top. Key letters in art on facing page correspond to letters in material list on page 60.

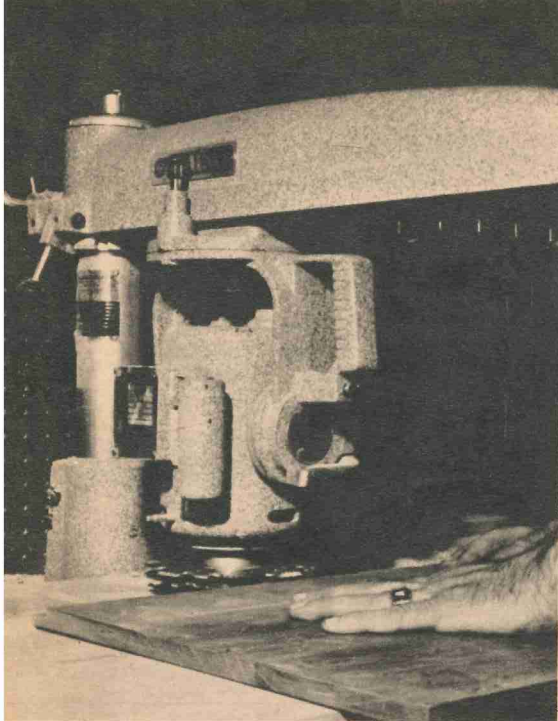




done, the three pieces dressed to width and squared to size, the first step is to cut the groove in the bottom of the side pieces, using dado heads on a DeWalt radial saw. Next, prepare the bottom which is a length of  $\frac{3}{4}$ -inch firply reinforced by battens of walnut the same thickness, and  $1\frac{1}{4}$  inches in width, fitted to the ends of the firply using tongue-and-groove joint. The grooves are cut in the ends of the plywood. A tongue of the required thickness is cut in one face of each batten and the assembly is glued up and clamped.

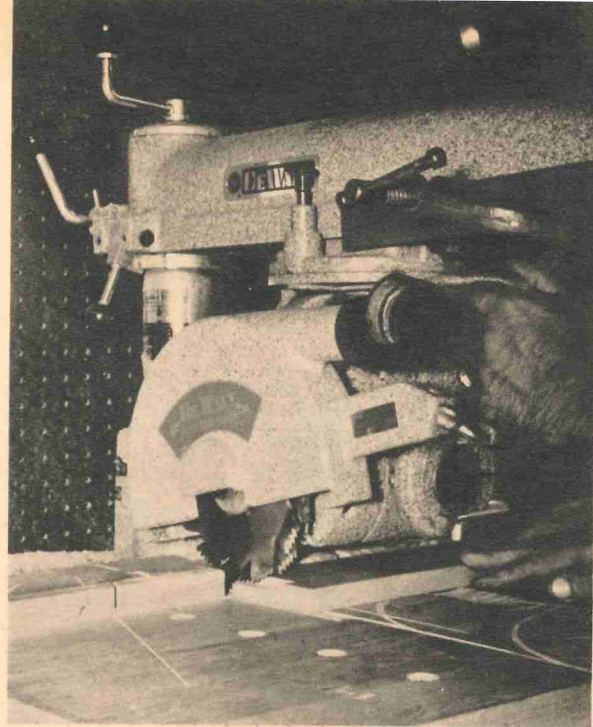
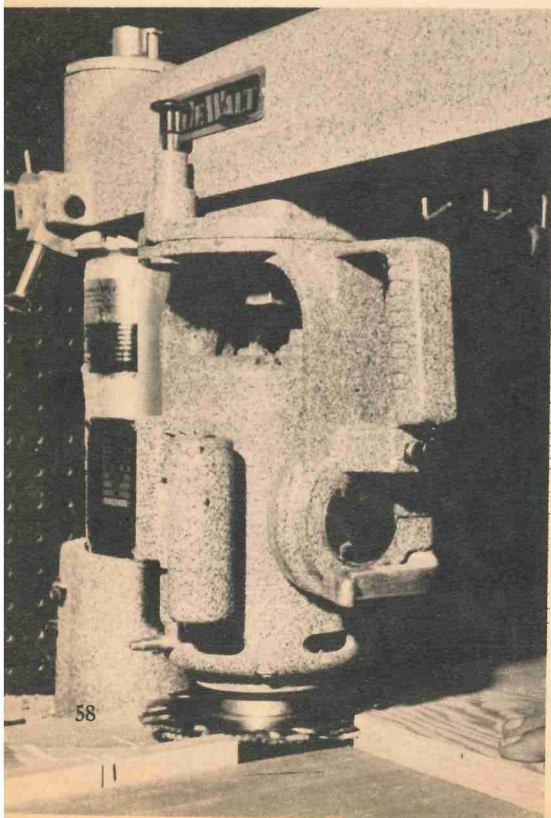
The two small drawers at the top, one a small-parts tray, differ just a little from the usual type of drawer in that the sides are narrower than the fronts. They are attached to the fronts by means of a blind dado. The saw is set to the required depth of cut to be made, and a clamp is positioned on the arm. This clamp allows the saw to cut only to the line. The arc left by the saw is then squared, using a one-inch chisel. The front and sides of the small drawer are grooved  $\frac{1}{4}$  x  $\frac{1}{4}$ -inch to accommodate the plywood bottom.





**AUTHOR** puts his DeWalt to work cutting a groove along the bottom of one of the side pieces using dado head on his radial saw.

**ENDS** of plywood bottom will be faced with  $\frac{3}{4}$ " x  $1\frac{1}{4}$ " walnut battens in tongue-and-groove joints. Here, grooves are being cut.



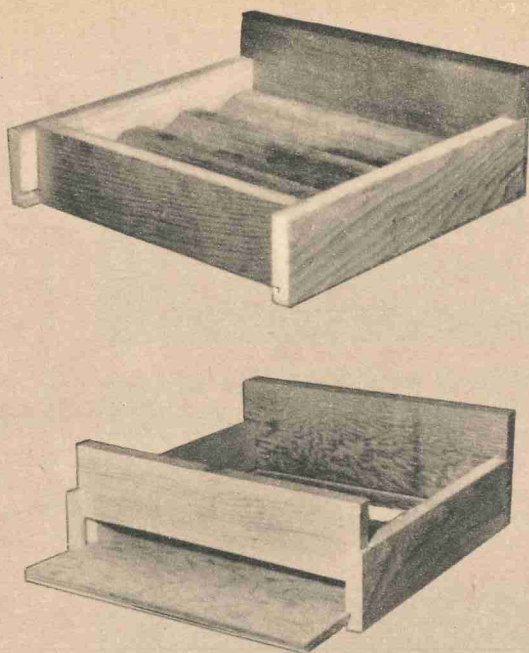
**DRAWER FRONTS** receive a similar groove but only partially up the sides. Dado heads are used, with saw placed horizontally.

The bottom of the small-parts drawer differs. It is actually a tray made from a solid piece, having three semicircular grooves cut in its length. The grooves are cut by setting the motor of the De Walt at an angle of 45 degrees and tilting it to an angle of 15 degrees. Mark the center of a width to be grooved and set the saw blade immediately above this mark. Make several trial passes with the blade, for possible adjustments, then cut the groove to the required depth— $\frac{3}{8}$  of an inch—adjusting the saw so that each pass is not over  $\frac{1}{16}$  inch deep. Cut the other grooves the same way. Smooth the grooves with sandpaper wrapped around a  $1\frac{1}{2}$ -inch dowel, then assemble the drawer using  $1\frac{1}{2}$ -inch finishing nails and glue. Round off the sharp edges of the sides and back.

The bottom drawer is of standard construction, with one slight variation—it has no back. Rather, it has two fronts so to speak, since this drawer opens from either end of the cabinet. As shown in the accompanying drawings, a space exists between the top and bottom drawers—this space is a materials bin, and the front of it is a V-



**CONSTRUCTION** of two small top drawers is shown at right. Drawer shown at top has a  $\frac{3}{4}$ " bottom with curved troughs to contain spools of thread. Bottom grooves in side pieces are optional since this bottom can be nailed in place. Grooves are necessary in drawer's sides, shown at bottom, to accommodate the  $\frac{1}{4}$ " plywood bottom panel.



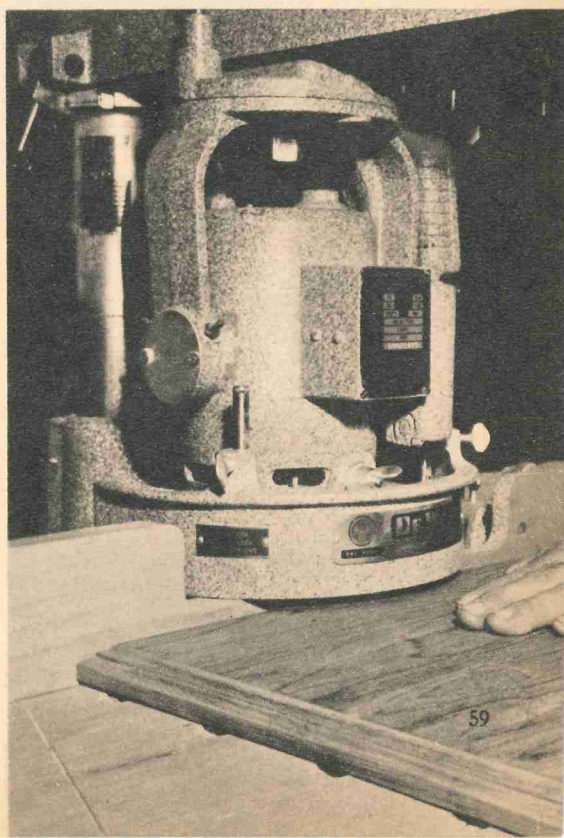
grooved panel of the same material as the remainder of the cabinet. The V groove is cut in the center of the panel to give an illusion of two drawers. This groove is cut on the radial saw using square cutters mounted in the shaping head, with the saw tilted at an angle of 45 degrees.

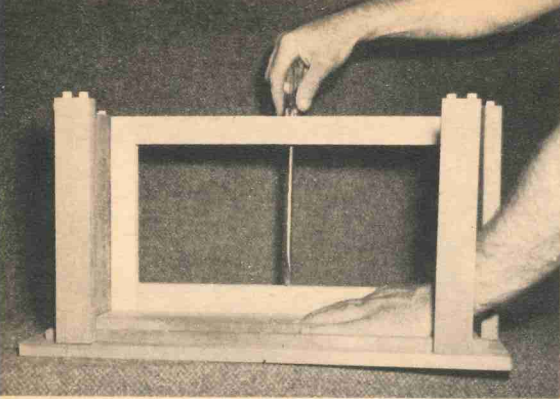
The accompanying drawings show the dimensions of the spool and pattern rack, and the completed component is shown in photographs.

The top of the cabinet is shaped as indicated in a photo on page 59, and it is then sanded smooth, first with the power sander, then by hand.

Dowel joints are used throughout the cabinet and care must be exercised in marking the positions for the holes to be bored. The best method is to use steel dowel pins, available from any craft house. Begin by marking the positions of the holes on one side, and bore the ten thus marked. Insert a steel pin in each of these ten holes and place the other side immediately over it. Tap the side lightly and the marks will appear where the holes are to be drilled. Follow the same procedure to determine the

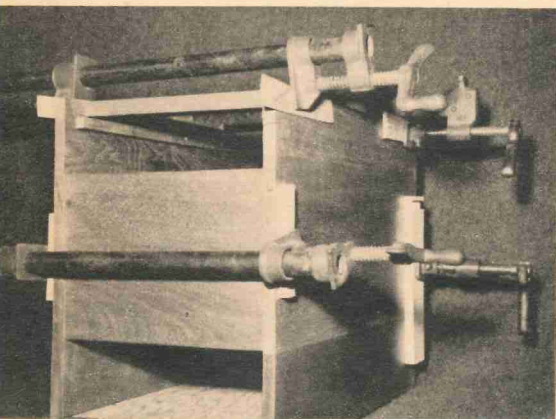
**FANCY ROUTER HEAD** is used to cut the decorative bevel on the finished walnut top. Pieces are glued, clamped together for top.





**CABINET IS ASSEMBLED** after all pieces are cut. Drawer slide frames are screwed on from inside. All pieces are glued in place.

**PIPE CLAMPS** insure solid bond after assembling the box with glue and screws. Protect the wood's finish with soft-wood blocks.



**INSTALL HARDWARE LAST.** This includes drawer pulls, hinges, and screw-on legs. The leg brackets allow for selection of angle.



## MATERIAL LIST

### WALNUT

- (A) 2 pieces  $\frac{3}{4}$ " x 16" x 21"  
(Cabinet Sides)
- (C) 2 pieces  $\frac{3}{4}$ " x  $1\frac{1}{4}$ " x  $12\frac{1}{2}$ "  
(Front Battens)
- (D) 2 pieces  $\frac{3}{4}$ " x  $8\frac{1}{4}$ " x  $11\frac{3}{4}$ "  
(Front Panels)
- (H) 2 pieces  $\frac{3}{4}$ " x  $1\frac{1}{2}$ " x  $11\frac{3}{4}$ "  
(Top Spreaders)
- (J) 4 pieces  $\frac{1}{2}$ " x  $1\frac{1}{4}$ " x  $3\frac{1}{2}$ "
- (I) 2 pieces  $\frac{1}{2}$ " x  $1\frac{1}{4}$ " x 10"
- (K) 1 piece  $\frac{1}{2}$ " x  $1\frac{1}{4}$ " x 6"
- (L) 2 pieces  $\frac{1}{8}$ " x  $\frac{3}{4}$ " x 6"
- (M) 8 dowels  $\frac{1}{2}$ " x  $1\frac{1}{4}$ "  
(Spool and Pattern Rack)
- (Q) 2 pieces  $\frac{3}{4}$ " x  $3\frac{1}{8}$ " x  $11\frac{3}{8}$ "  
(Top Drawer Fronts)
- (T) 2 pieces  $\frac{3}{4}$ " x  $3\frac{5}{8}$ " x  $11\frac{5}{8}$ "  
(Bottom Drawer Fronts)
- (U) 1 piece  $\frac{3}{4}$ " x  $8\frac{3}{4}$ " x  $10\frac{5}{8}$ "  
(Small Parts Tray)
- (V) 1 piece  $\frac{3}{4}$ " x  $13\frac{3}{4}$ " x 23"  
(Top)

### PINE

- (E) 4 pieces  $\frac{1}{2}$ " x  $\frac{1}{2}$ " x  $19\frac{1}{4}$ "  
(Top Drawer Slides)
- (F) 2 pieces  $\frac{3}{4}$ " x  $1\frac{1}{2}$ " x  $16\frac{1}{2}$ "  
2 pieces  $\frac{3}{4}$ " x  $1\frac{1}{2}$ " x  $11\frac{3}{4}$ "  
(Bin Floor Frame)
- (N) 4 pieces  $\frac{1}{2}$ " x  $1\frac{7}{8}$ " x  $9\frac{1}{4}$ "  
(Top Drawer Sides)
- (O) 2 pieces  $\frac{1}{2}$ " x  $1\frac{1}{4}$ " x  $10\frac{5}{8}$ "  
(Top Drawer Backs)
- (P) 1 piece  $\frac{1}{4}$ " x  $11\frac{1}{8}$ " x 9"  
(Top Drawer Bottom)
- (R) 2 pieces  $\frac{1}{2}$ " x  $3\frac{5}{8}$ " x  $19\frac{1}{4}$ "  
(Bottom Drawer Sides)

### PLYWOOD

- (B) 1 piece  $\frac{3}{4}$ " x  $12\frac{1}{2}$ " x  $18\frac{1}{2}$ "  
(Cabinet Bottom)
- (G) 1 piece  $\frac{1}{4}$ " x  $11\frac{3}{4}$ " x  $18\frac{1}{2}$ "  
(Bin Floor)
- (S) 1 piece  $\frac{1}{4}$ " x  $11\frac{1}{8}$ " x  $19\frac{1}{4}$ "  
(Lower Drawer Bottom)

### HARDWARE

- 8 RH Brass Screws  $\frac{3}{4}$ "
- 2 Brass Butt Hinges 1" x  $1\frac{1}{2}$ "
- 8 Drawer Pulls
- 4 Tipped Legs, 6"
- 1 Brass Chain, 15"



positions of the holes in the top spreaders and the V-grooved panel.

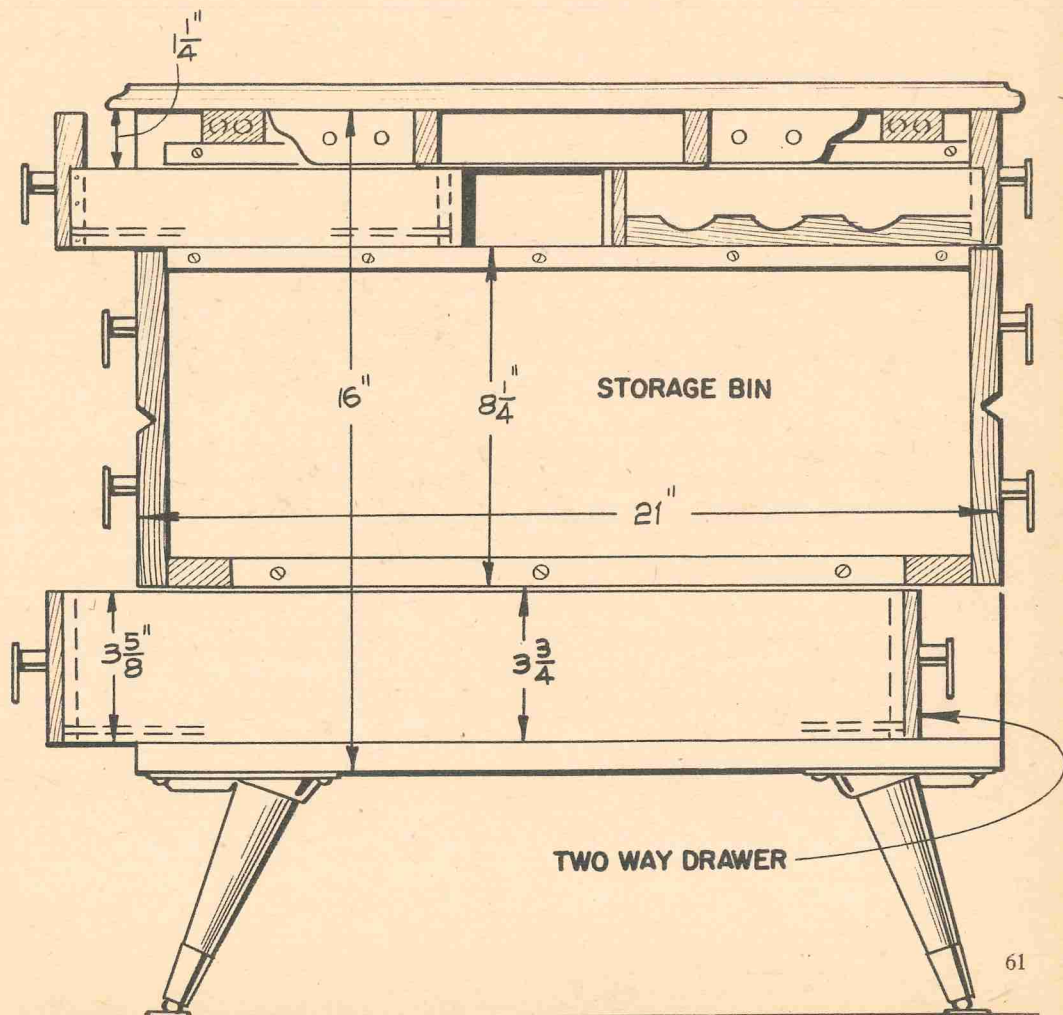
The frame which supports the bin floor is made from 1 x 2-inch dressed pine. Holes are drilled and counter-bored, and 1½-inch FH No. 10 wood screws are used to secure the frame to the sides of the cabinet. The floor of the materials bin is ¼-inch plywood, attached to the frame with glue and ¾-inch brads.

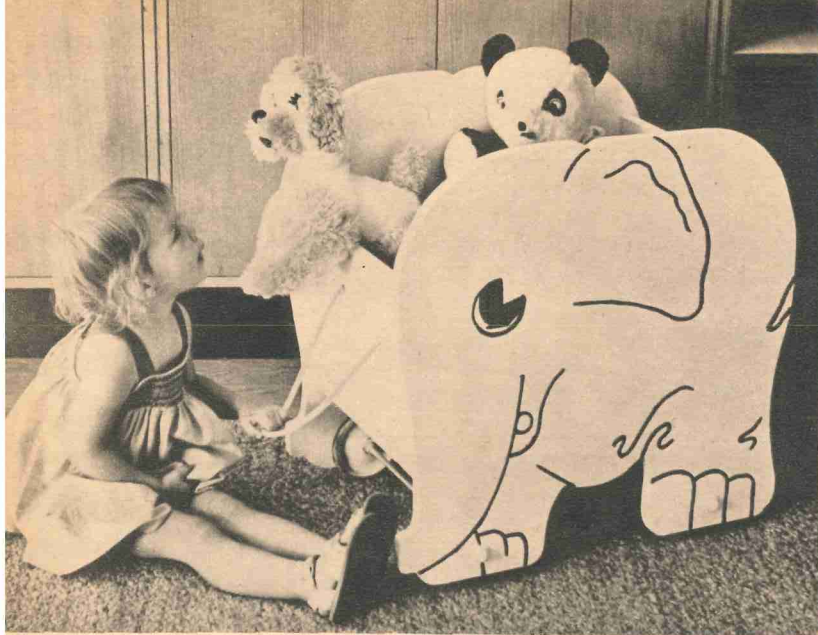
Begin final assembly of the cabinet by inserting the dowels into the holes already drilled into the ends of the top spreaders and V-panel. Attach the drawer slides in place using glue and three ¾-inch No. 8 FH woods screws through each slide into the cabinet sides. Attach the bin-floor frame. (Two things to remember here: First, be sure to drill the holes for the handles in the V-grooved piece, and second, insert the

¼-inch ply materials-bin floor before the final clamping.)

Place the other side in position, insert the bottom in the groove cut for it, and clamp the entire assembly. Be sure to insert soft wood blocks under the clamp jaws, and be sure to check the squareness.

The top is attached to the sides using a pair of 1 x 1½-inch brass hinges set all the way into the side. This is done to avoid cutting into the under surface of the top. The spool and pattern bin is attached to the top using ¾-inch No. 8 RH brass screws. A length of brass chain attached to the top and one side of the top spreader keeps the lid from flopping over backward and tearing the hinges loose. The last step in assembly is to attach the 6-inch tapered hardwood legs with brass tips to the under side of the cabinet. •





A SIMPLE and movable storage bin that will make it comfortable for a child to carry many toys around the house. Will also encourage the child to keep house tidy.

## Toy Storage

**H**ERE is an attractive and easy-to-build toy storage project which will delight little children. The elephant can easily be wheeled around through a house with a load of toys. It will encourage young children to keep not only their own room, but the house, tidy and neat.

This project using Simpson  $\frac{3}{4}$ -inch white acrylic overlaid plywood needs only to be painted with the black elephant outline. The surface is a tough, acrylic thermoplastic and is available faced on both sides.

To build this elephant, follow these step-by-step directions: Cut the front, back, bottom and sides from a 4'x4' sheet of  $\frac{3}{4}$ -inch plywood. Enlarge the elephant pattern on tracing or kraft paper. Clamp side pieces, and using enlarged elephant pattern, cut together with a saber saw or a coping saw. With the two sides still clamped together, use Stanley Surform speed forming tools to further shape the plywood and smooth the edges in the outline of the elephant. Sandpaper all edges.

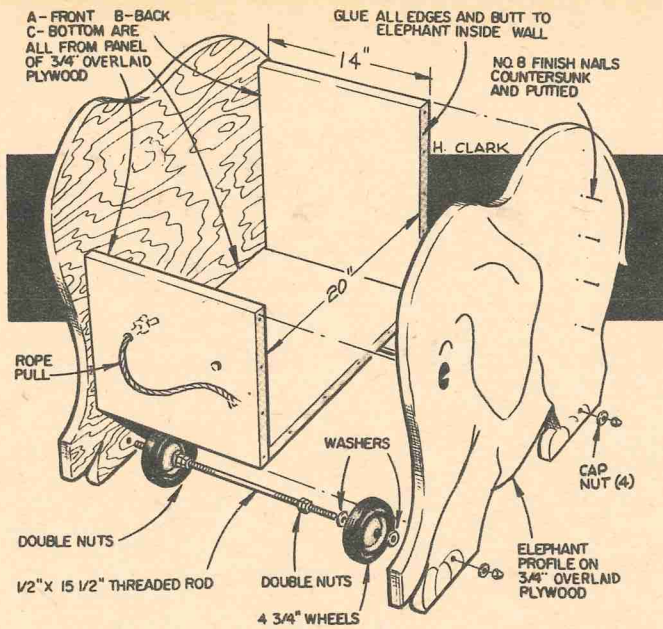
Start assembly by gluing and nailing

the front and back to the bottom. Next, glue and nail the sides to front-back-bottom unit. A square edge will be helpful as a nailing guide. Countersink nails with a nail set and fill holes with putty. Spackle the exposed plywood edges on the side of the elephant. Let harden, then sand smooth and paint white to match the overlaid plywood. Trace the lines of the elephant on both sides and paint them black.

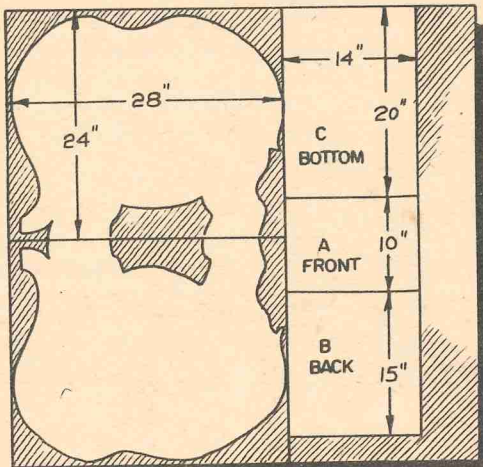
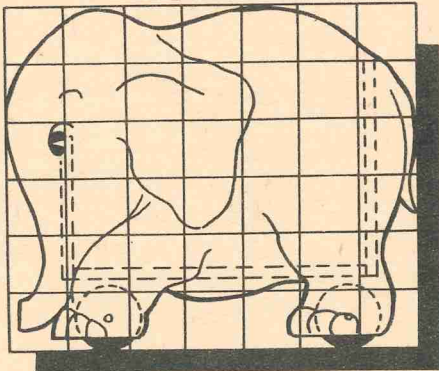
Drill the holes for the axles. Cut the half-inch threaded rod to the length desired, allowing sufficient length to tighten the cap nuts. Screw on the two lock nuts and put washers and rubber-tire wheels in position on each side of the axle. Insert in through the holes and lock in place with the cap nuts. The lock nuts can be screwed towards the sides of the plywood to align the wheels. Lock firmly against the washers so that wheels will not wobble, yet turn easily.

Drill holes for the half-inch-diameter white nylon rope handle and install. Wire and tape the ends of the rope to prevent fraying. Touch up where necessary and the elephant is ready to use. •





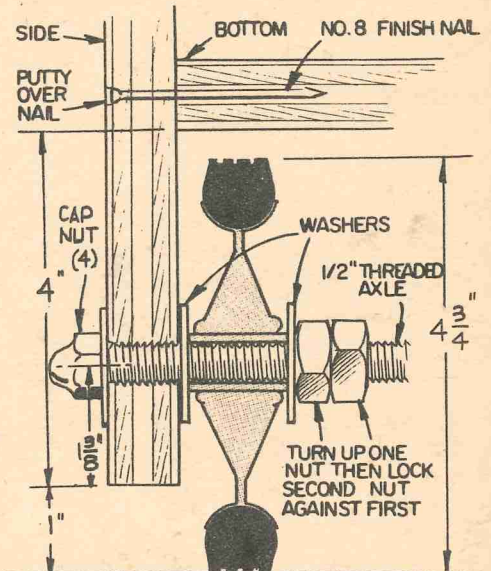
ELEPHANT PROFILE ON 4" SQUARES

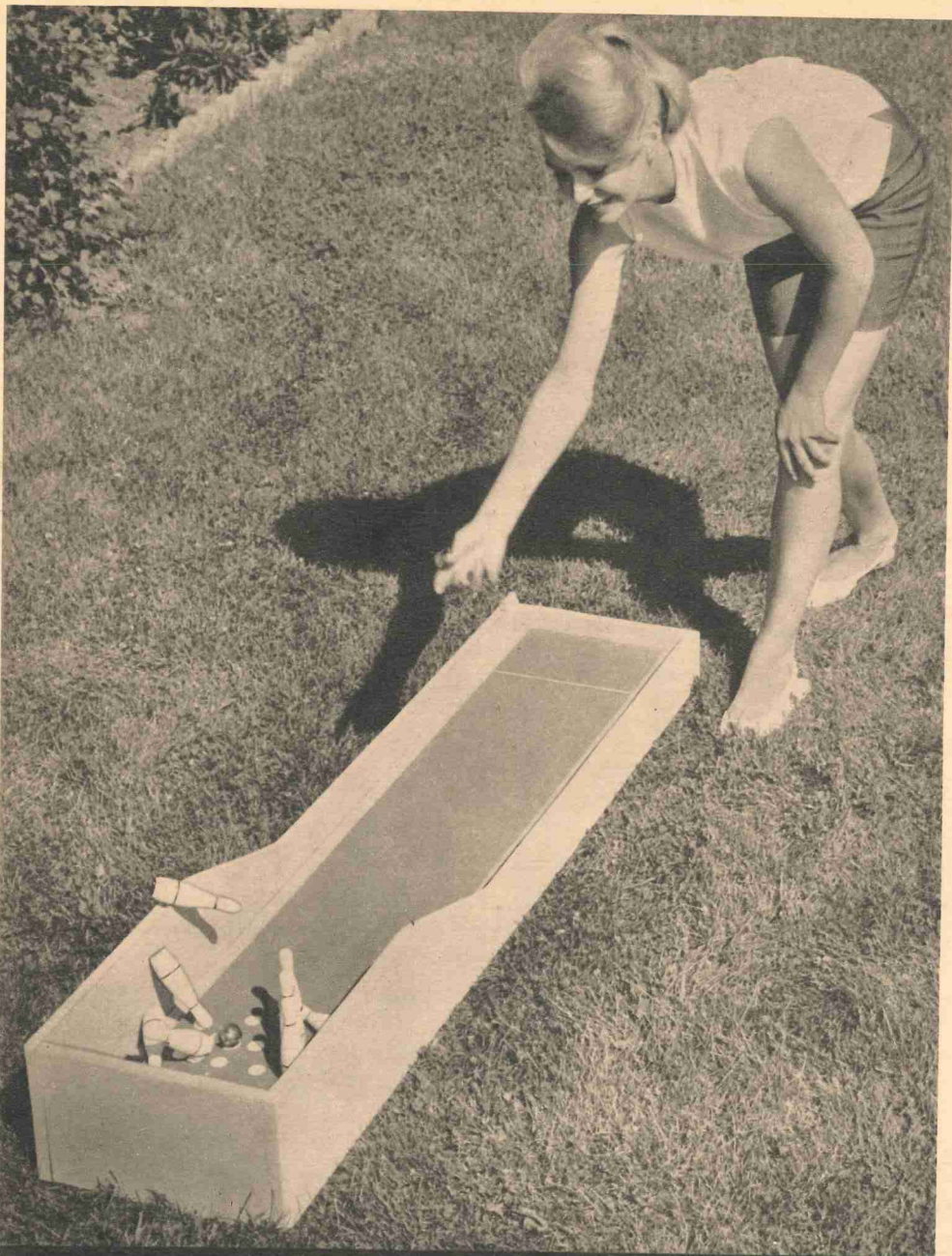


3/4" X 4' X 4' OVERLAID PLYWOOD YIELDS ALL PARTS

### MATERIAL LIST

- 1 piece plywood 3/4" x 10" x 14" (front)
- 1 piece plywood 3/4" x 15" x 14" (back)
- 1 piece plywood 3/4" x 20" x 14" (bottom)
- 2 pieces plywood 3/4" x 24" x 28" (sides)
- 4 rubber tire wheels 1/2" x 4 3/4"
- 2 axles (threaded rod) 1/2" x 24" (cut of fit)
- 12 large washers to clear 1/2" axle
- 4 cap nuts
- 8 lock nuts
- No. 8 finish nails

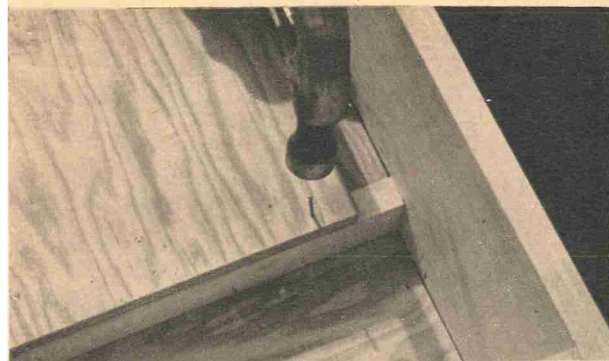




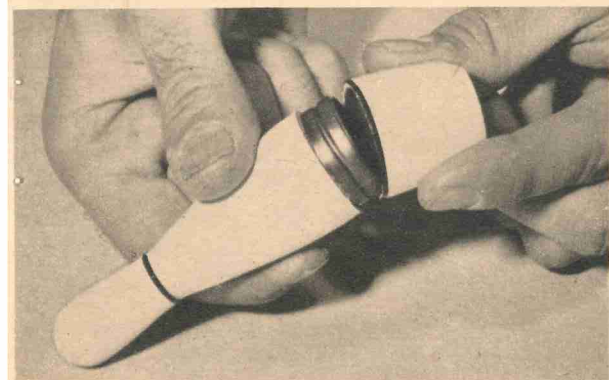
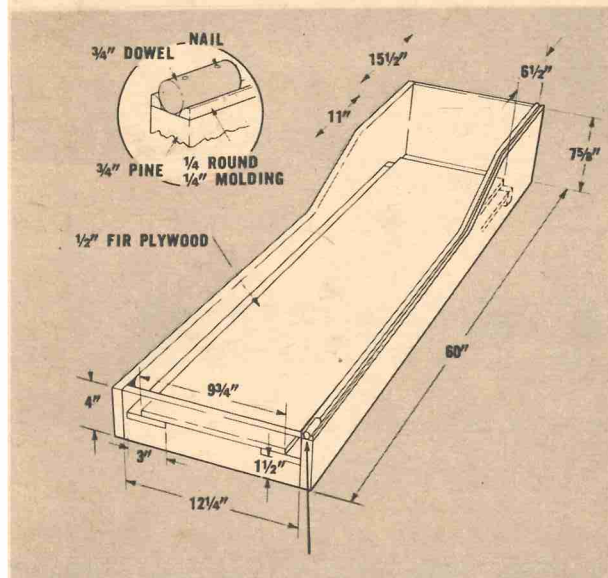
## **MINIATURE BOWLING ALLEY**

A pint-size lane that will provide endless fun  
for both the beginner and the skillful kegler.





USE finishing nails and glue to assemble. Trough at rear of alley holds knocked-down pins. Note how the gutter empties into it.



UNLESS you choose to turn your own pins from rock maple, shop around for a set of the plastic variety and weight with sand.

**T**HIS pint-size bowling alley will provide lots of pleasure for young and old, for it's made much like a real one, complete to gutters and ball return. For added realism a 1¼-in. steel ball is used as a bowling ball. This has the feel and weight (in proportion) of a real one and is more apt to stay on course than a lighter ball. The steel ball can be hooked or curved as you would a regulation bowling ball, thus making this a game of skill for more serious players.

To simplify construction we used a set of plastic ten pins purchased at a toy shop. These proved to be too light, especially in relation to the large steel ball, so we filled them with sand. That made them about right, weight-wise. The pins are made in two sections, threaded near the bottom, so they are easy to fill.

If one-piece pins are used, drill a hole in the bottom, fill with sand, then plug. The amount of sand is best determined by trial and error.

**Begin construction** by cutting the sides and end pieces from ¾-in. pine. Butt join with finishing nails and glue. Install the alley next, using half-inch fir plywood with two overlapped strips to form the gutters. Note that there is a 6½-in. trough at the rear of the alley.

The ball-return channel is made from two pieces of quarter-round molding with the two rounds facing each other. A length of ¾-in. dowel serves as a ball stop. To prevent splitting the molding when bending to the contour of the side, soak the strips in hot water. While still wet, nail into place with one-inch brads.

The alley may be sanded and left natural, with just a coat of varnish, or painted in bright enamels. A fine line painted 6½ in. from the approach end of the alley serves as the foul line. The pin-set diagram can be painted or fashioned from pressure-sensitive labels.

**Steel balls** of the size specified may be acquired from dealers in new and used ball bearings or amusement-device (pin-ball) operators.

The game is best played with two or more persons with the players alternating as pin boys and bowlers. •

—R. J. Capotosto



# THE BUCKING BRONCO

*Exciting as a rodeo, this toy will give your toddler lots of action as he pulls it along.*

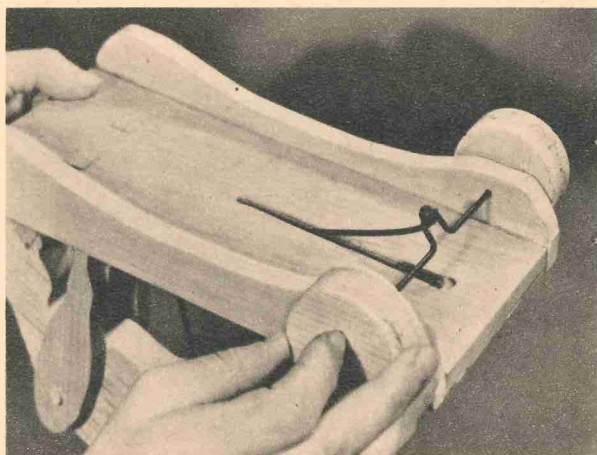
By W. and E. Waltner

**B**UILD this bucking bronco yourself to accompany the patter of little feet around the house. It is easy to build and should be a big hit with the kids.

Besides, your problem of what to do with left-over wood scraps is also solved by making this interesting little toy!

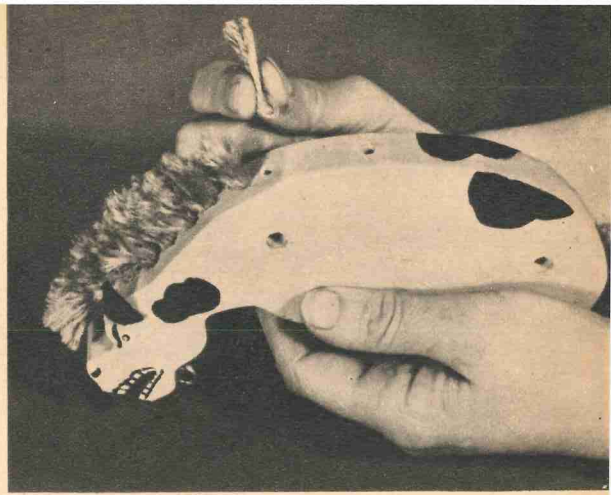
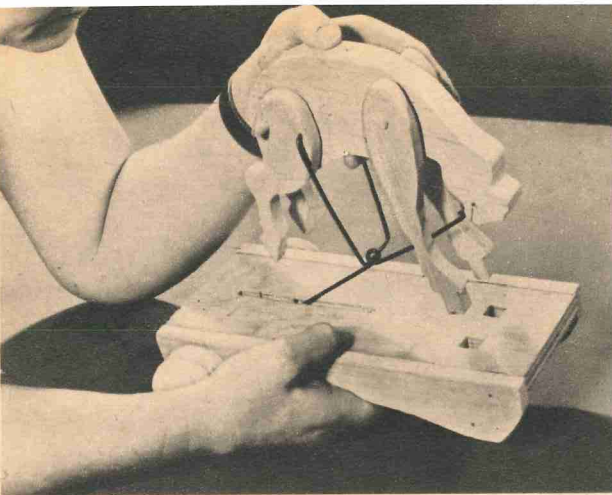
All you will need is a few pieces of  $\frac{3}{4}$  and  $\frac{1}{2}$ -inch stock. Cut these to shape following the scale drawing shown on the right. The body, head and hat of the cowboy rider are turned on a lathe to the dimensions given in the construction details.

When adjusting the crankshaft, set it so that when the crankshaft is forward, the back legs are down. Don't forget to add the string. •



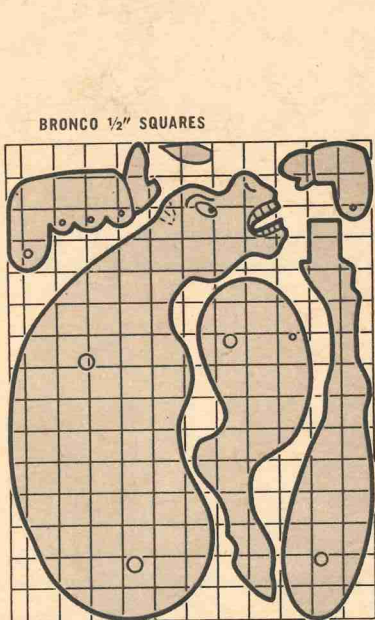
**THE BRONCO** is activated by a crankshaft mechanism incorporated into the rear axle.



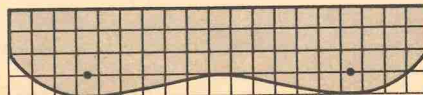
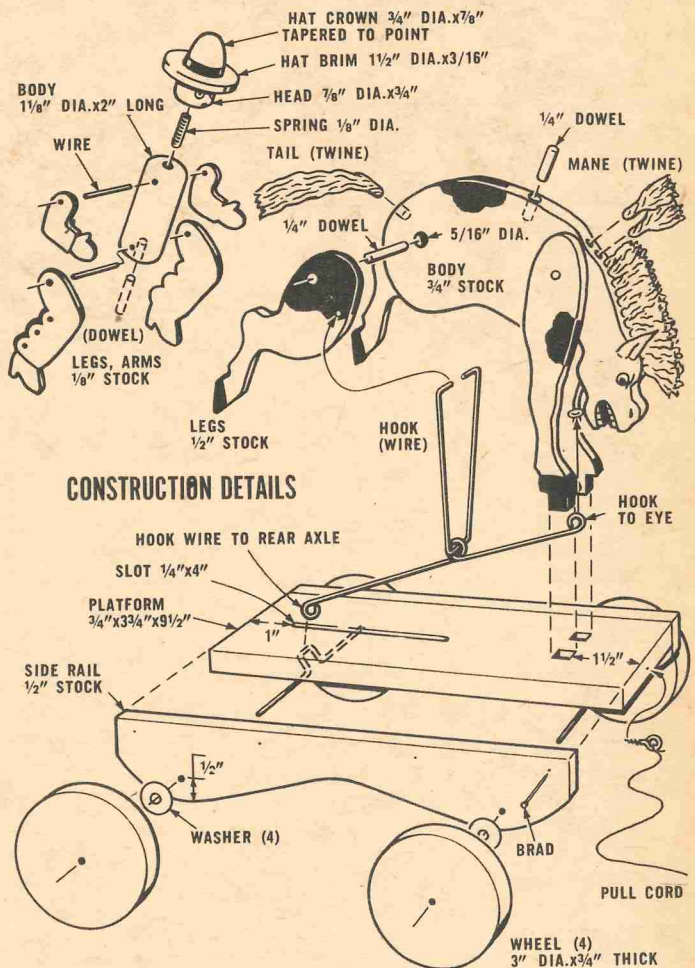


**SEMI-FINISHED** bronco is positioned on platform to check wire position and fit.

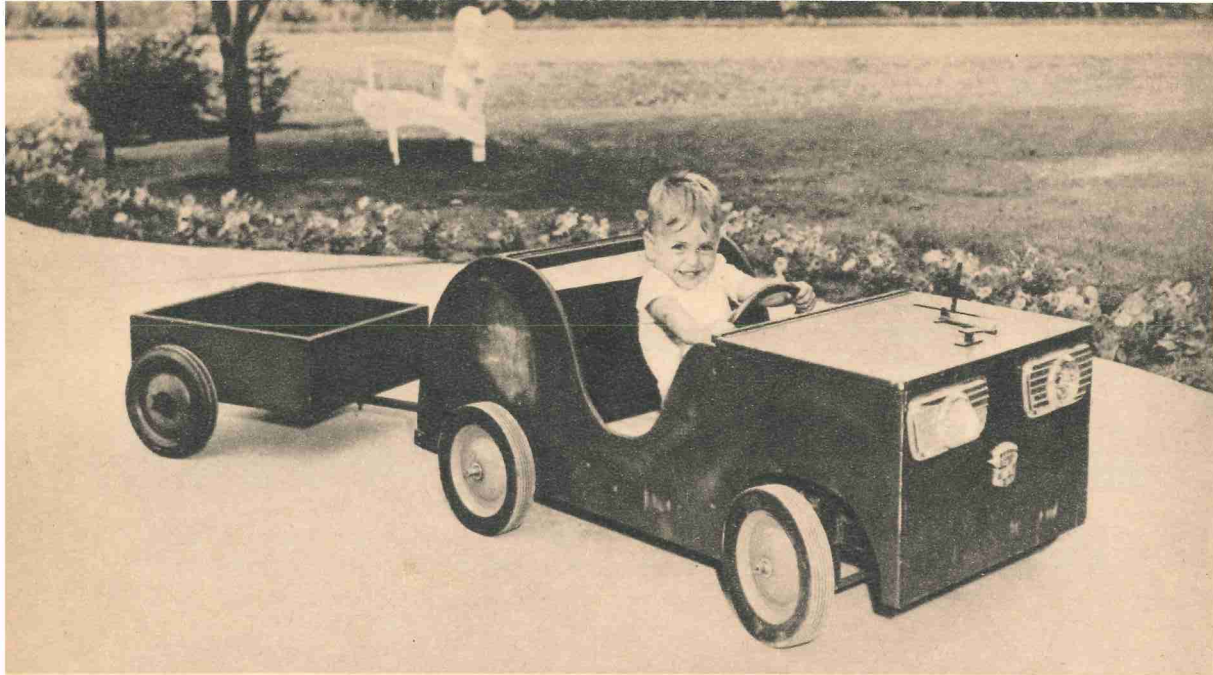
**TWINE** is glued into holes in bronco's neck and rump to form his mane and tail.



**CUT OUT** the parts of the bronco accurately by using the 1/2-inch square scale drawing above.



**SIDE RAIL 1/2" SQUARES**



THIS CAR serves as a wonderful plaything for any youngster. Note forward and reverse shifting rod protruding from hood. Lights and horn are optional, as is two-wheel trailer.

# Child's Automobile

By Russell Hanson

**M**OST ANY YOUNGSTER would like to have a sidewalk automobile, one that operates much like a regular car. The model described here offers this realistic operation and it is easy to maintain. Basically, the car is designed for use by children between the ages of 3-10 and, for safety's sake, top speed is set at 3 mph.

The little car is electrically powered by a wet battery and an automobile starter motor. Practically all parts can be purchased secondhand. Any weekend handy man who has a few metal working tools, and can follow a simple wiring diagram can duplicate it. It will be necessary to make a few wiring changes in the starter motor to permit reversing the polarity of the field coils.

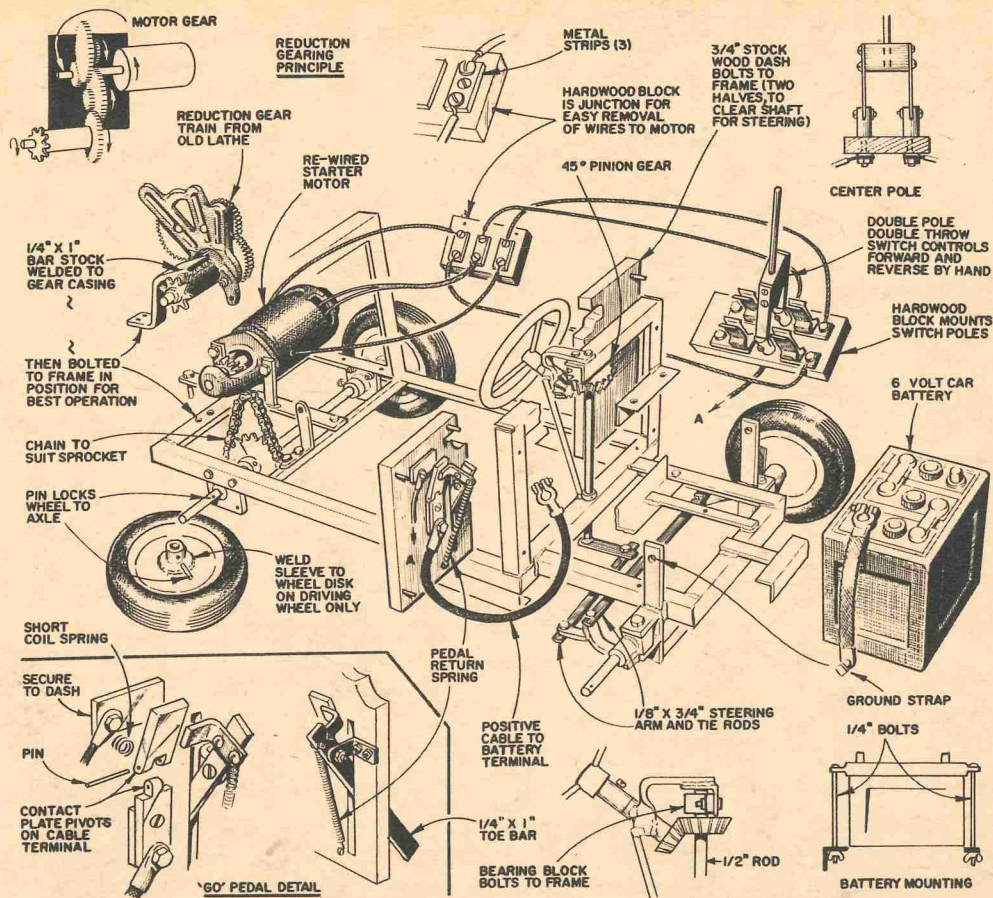
The car boasts a forward and reverse shifting rod, and can be brought to a quick stop just by releasing the pressure on the foot pedal (motor acts as the

brake). Also, the overall frame design insures a low center of gravity to prevent accidental tipping should the car be driven over rough, hilly terrain.

Total costs for all of the parts will vary with each builder, depending on how much scrap material he has on hand. However, the car described here was fully assembled for slightly less than \$40.00. The cost breakdown includes:

- \$2.00 for a secondhand 6-volt starter motor, taken from a 1931 Chevy and purchased at a local junk yard.
- \$2.00 for a secondhand 6-volt wet battery, bought at a gas station. (A newer 12-volt battery and a 12-volt starter motor could be used. But keep in mind that the starter motor and battery voltage must be the same)
- \$3.50 for a used series of speed reducing gears for the starter motor. Set





- came from an old lathe and was another junk-yard purchase.
- \$7.00 for a set of new 10-inch rubber-tired wheels.
  - \$15.00 for a new battery charger.
  - \$9.00 for a 1/2 inch sheet of 4'x8' plywood for car body.

Balance of parts: metal for the framework (could be picked up at a junk yard) wiring, switches, horn, lights, steering wheel and column assembly, steering mechanism—were made out of available scrap materials.

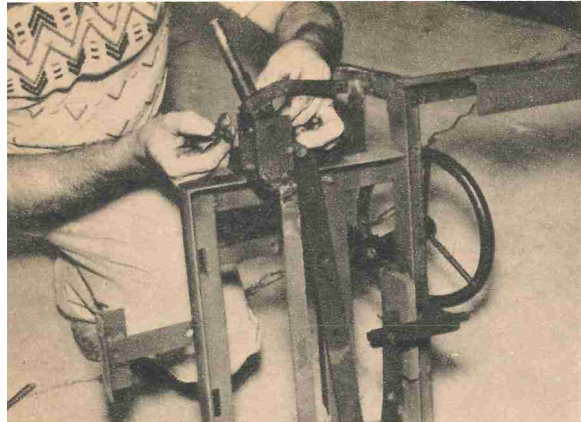
Car body style and type and size of framework will undoubtedly vary from one builder to the next. Even the arrangement or position of the power system may be changed according to space requirements; but the general assembly details will remain the same. Here is the way this model was built:

Builder wanted to keep car size small for several reasons, namely, that a

**A SHORT TIE ROD**, connecting one spindle assembly to bottom end of the steering column, is here being attached. Note the spindle assembly lying in the foreground.

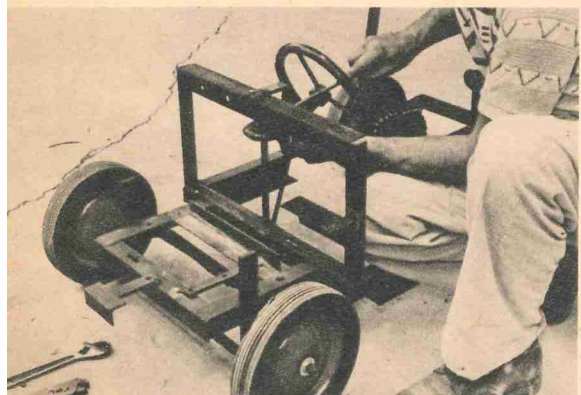




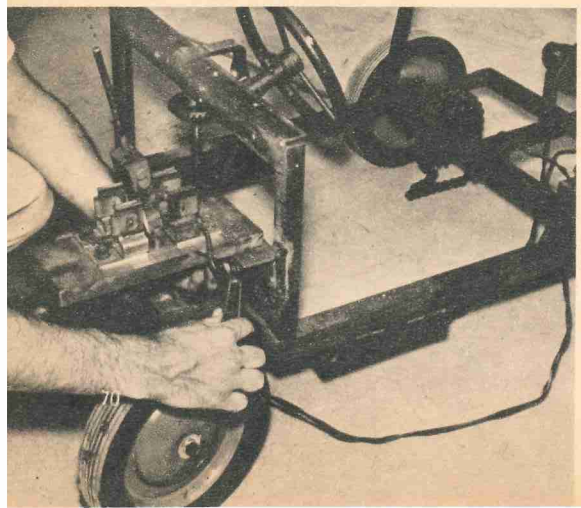


**THE BUILDER** is inserting the king pin into the spindle assembly. The bumper-like unit, projecting out to the left of the car frame, serves as an anchoring for the car body.

**NOTE THE** bevel gear and the arrangement of the steering column. Also seen are various frame brackets to support the battery and the polarity switch for forward and reverse.



**CLOSE-UP OF** forward and reverse switches with an elongated handle which projects out of hood. Heavy No. 10 wire is used in all connections between the battery and motor.



larger car body would attract too many older children in the neighborhood, and also be too difficult for a youngster to maneuver.

All of the metal framework was made of  $1\frac{1}{2}$ " x  $1\frac{1}{2}$ " angle iron, welded together for strength. Builder did his own welding. Here again, anyone unprepared to do this work himself can have it welded locally for a nominal charge. For economy reasons, all frame sections should be cut to size beforehand, then bolted, screwed, or wired together in the desired positions and taken to a welding shop.

The car has a rear wheel drive, but no differential. One wheel was made to revolve freely and the other attached to the axle and turned by a chain sprocket also pinned to the axle. Self aligning bearings for the rear wheels were bolted to the frame. A steel collar was welded to the inner face of the drive wheel and pinned to the axle.

The steering mechanism on even a small car requires some geometric figuring, before the parts are shaped, in order to lessen tire wear and drag whenever the front wheels are turned. (In any turn to the right or left, the inner, or pivot wheel turns sharper than its mate—the outer, or perimeter wheel.)

For example, on a Buick, when the outer wheel is turned 20 degrees, the inner wheel turns  $22\frac{1}{2}$  degrees. In the car plan discussed here, the inner turn angle for each front wheel was set approximately 2 to 3 degrees greater than its outer turn angle. All metal parts shaped for the steering mechanism were built according to the dimensions given in the drawings, and have worked satisfactorily.

Each spindle was cut to length from a half-inch-diameter steel rod to fit the wheel hub, and welded to a knuckle. Because of the size and shape of metal scraps on hand and the type of metal working tools available, each builder's design and dimensions may vary. (Actually, spindle and knuckle could be made from one section of steel bar, the spindle being turned on a lathe.) Next, each spindle knuckle was welded to a half-inch-diameter metal bracket bent

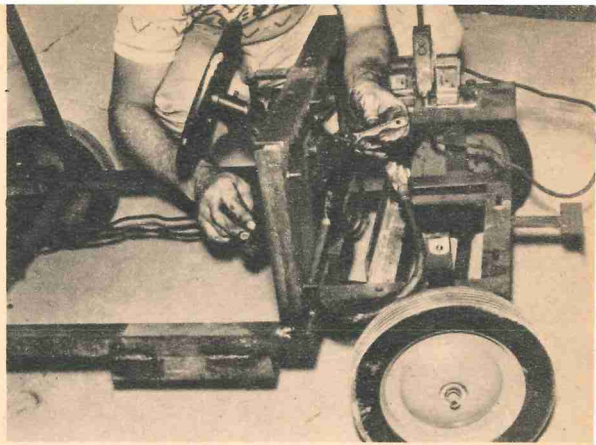


to desired shape. King pin holes were drilled in both knuckle and spindle support assembly. A flat section of metal was used as a tie rod connecting the two spindle assemblies, and a short section joining only one spindle assembly to the bottom end of the steering column (see photo). U-shaped brackets that form the spindle support assembly were welded to the frame.

Because of the battery's location under the front hood, a direct angled steering column between the steering wheel handle and tie rod could not be used. Instead, the steering column was divided into two rod sections. The end of one rod was fastened to the tie rod by means of a short bar extension. The other end has a beveled gear pinned to it which meshes with a second beveled gear pinned to the end of a short steering wheel rod. Variations in this part of the overall steering mechanism would be predicated on the size, shape, and amount of available scrap materials.

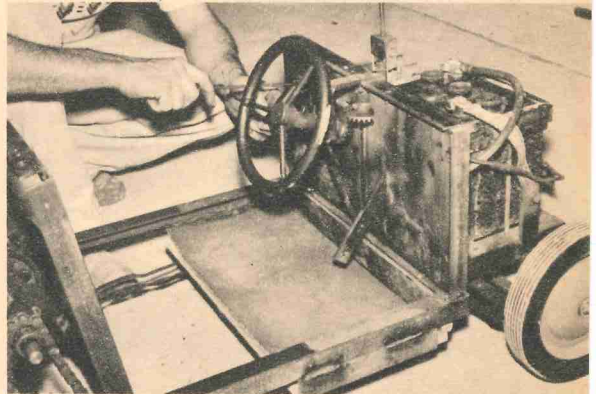
One of the more desirable features built into this model car is the forward and reverse operation. To do this, certain modifications in the starter motor wiring were necessary. Also, it required a double-pole, double-throw switch to reverse the polarity of both field coils in the starter motor and permit changing the motor direction. An extension rod or handle long enough to protrude out of the hood top was used in place of the shorter, conventional switch handle.

The first step in changing the starter motor wiring was to disassemble the unit—take off the casing and remove the gear pinion from the motor shaft. Later, the gear pinion was replaced with the desired size reduction gear. Next, the starter switch was removed from the casing. (On some starter motors this exposes a lug. Lead wire to field coils could then be attached to the lug, or as was done here, inserted through a hole drilled in the casing.) Then the field coil wires were disconnected from the positive brushes and joined to a common lead wire. Two wires were run from each positive brush and joined. To simplify removing the motor whenever it becomes necessary, a junction block was

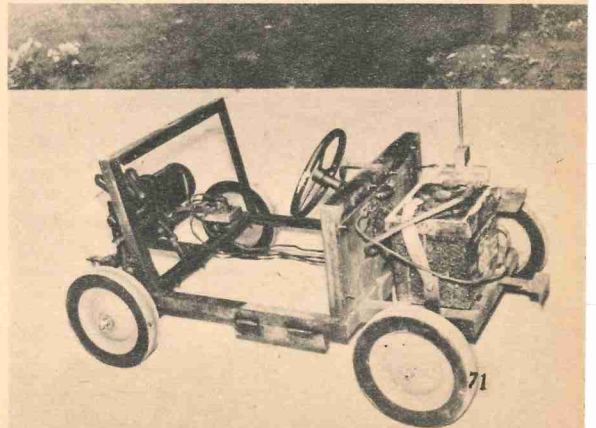


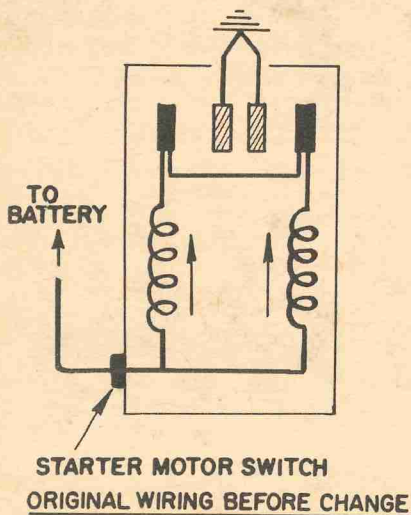
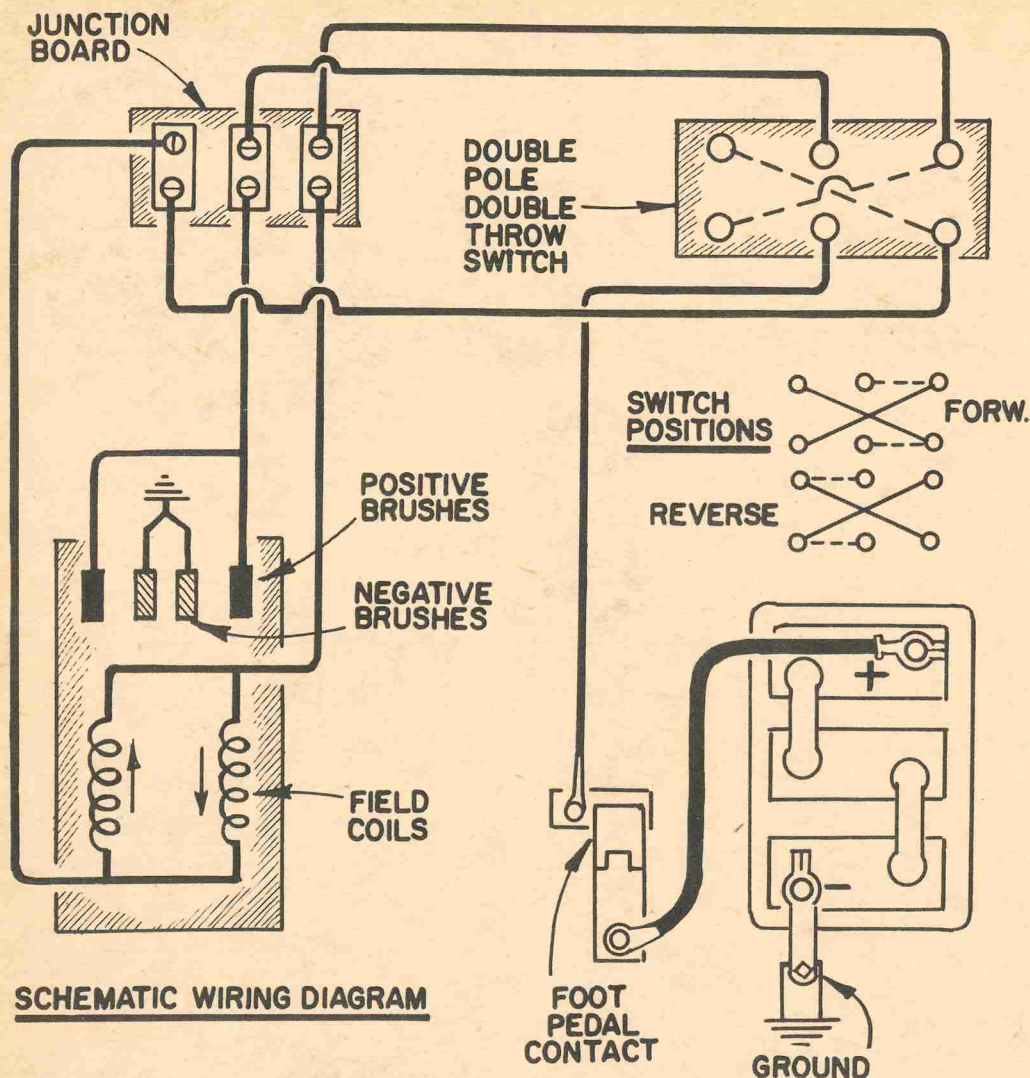
**BE SURE TO** tighten the screw which holds strong spring fastened to foot pedal start switch. Relieve foot tension by placing the pivot point of pedal high, just below wrench.

**GEAR ASSEMBLY** is covered with metal plate to prevent a child getting caught in gears. Elongated, narrow foot pedal made of scrap steel protrudes out of the dashboard.



**COMPLETED FRAMEWORK** with motor, battery in position is shown below. Car is now ready for body which is screwed to frame. Design offers safety and realistic operation.



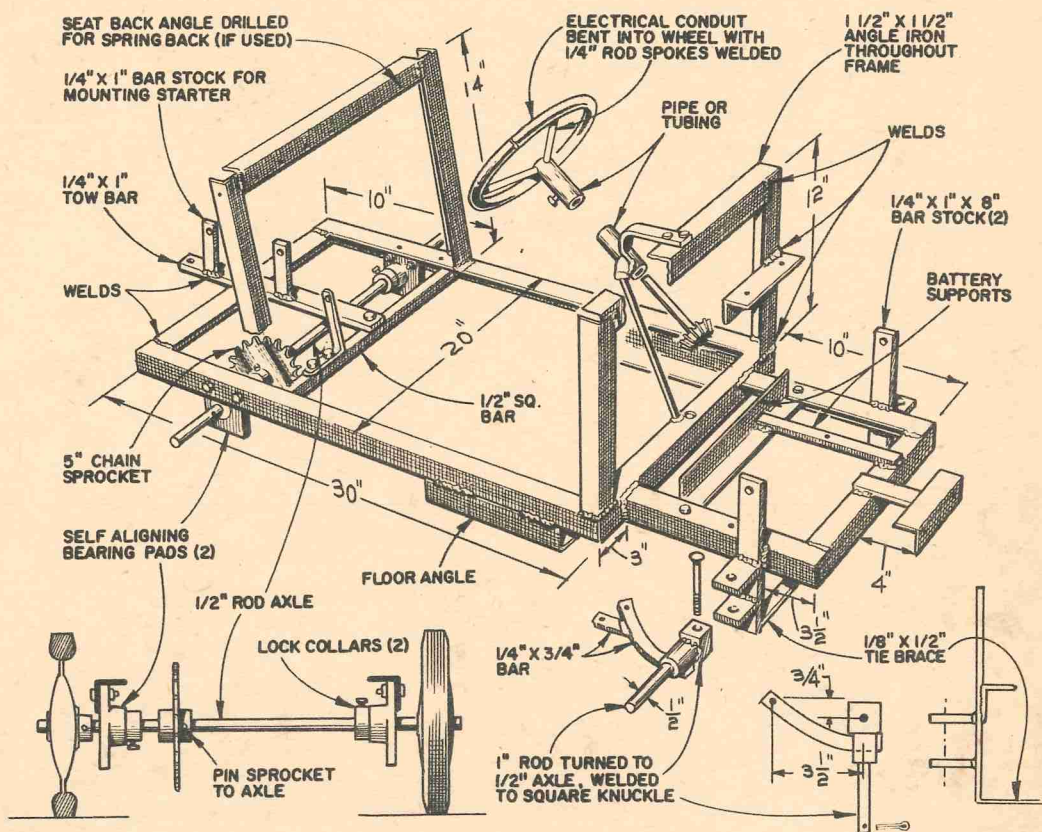


installed in the motor-to-reverse-switch wiring setup.

Because of the high amperage in this electrical system (starter motor draws as many amps as needed to move load) and to keep wires from overheating, No. 10 wire was used for all connections between battery and motor. A smaller wire was used for lights and horn.

The positive wire from the battery was attached to the foot pedal motor switch—new location for the starter motor switch. Again because of the high amperage, which might cause the starter switch to arc and possibly weld itself together, a strong spring was attached





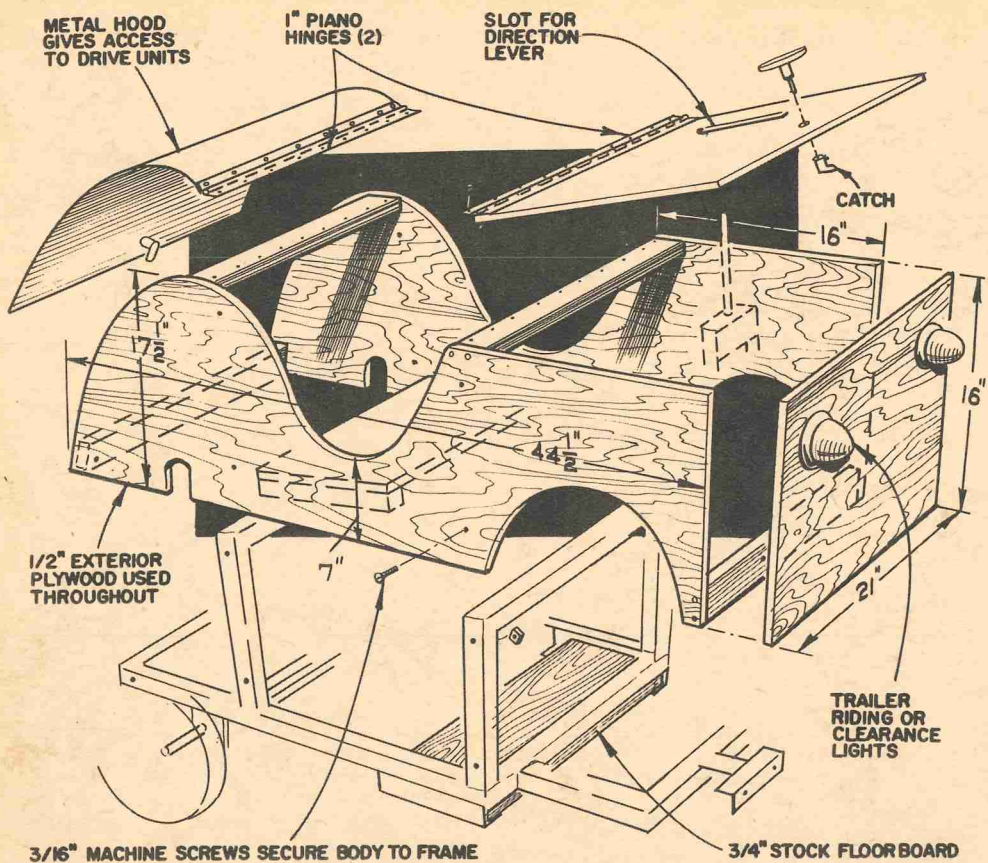
to the top end of the foot pedal. To make the foot pedal easier for a child to operate (to overcome tension created by strong spring) pedal bar pivot point was located close to the starter switch. Leverage thus favors child's foot. A narrow foot pedal bar was used to make it easier for a child's foot to slip off the foot pedal should the car bump into a tree or some other object. Release of pressure against the foot pedal, as stated earlier, stops the car. Motor acts as the only brake needed.

In order to set the car's speed at approximately 3 mph, the motor's rpm had to be reduced. There were several ways

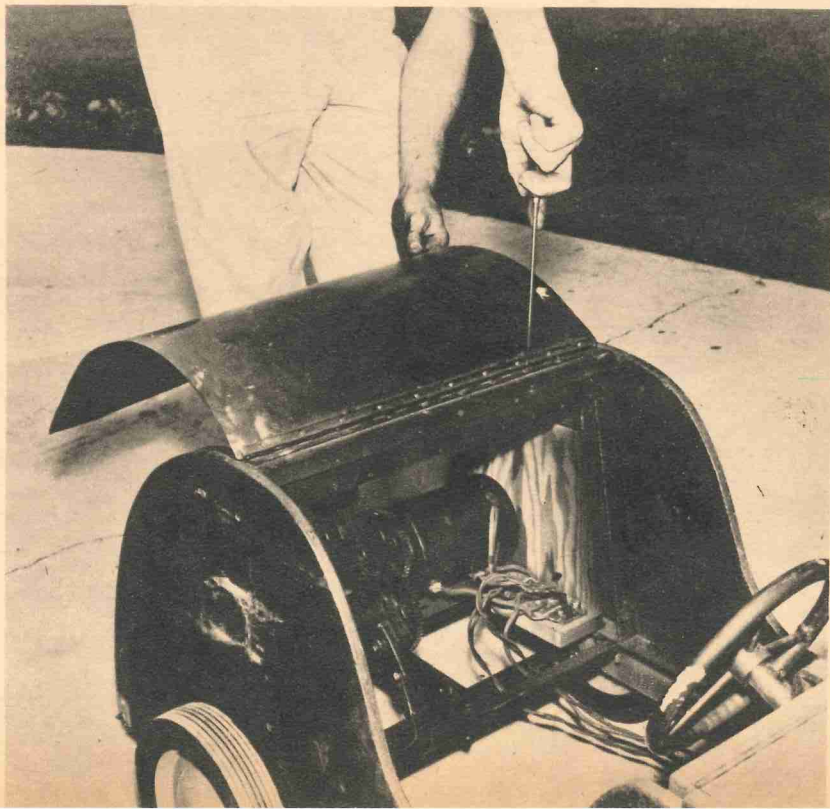
to do this—a series of speed reducing gears, pulleys and V belts, or by worm gear. In this case, the builder used a set of speed reducing gears taken from an old lathe.

Any car builder who intends using a starter motor should know something about the characteristics of this type of motor and how to reduce the rpm to bring about the desired wheel speed. In the first place, a DC starter motor has no fixed rpm without a load or resistance being offered to the motor. It may climb gradually from 2,000 up to 6 or 7,000 rpm.

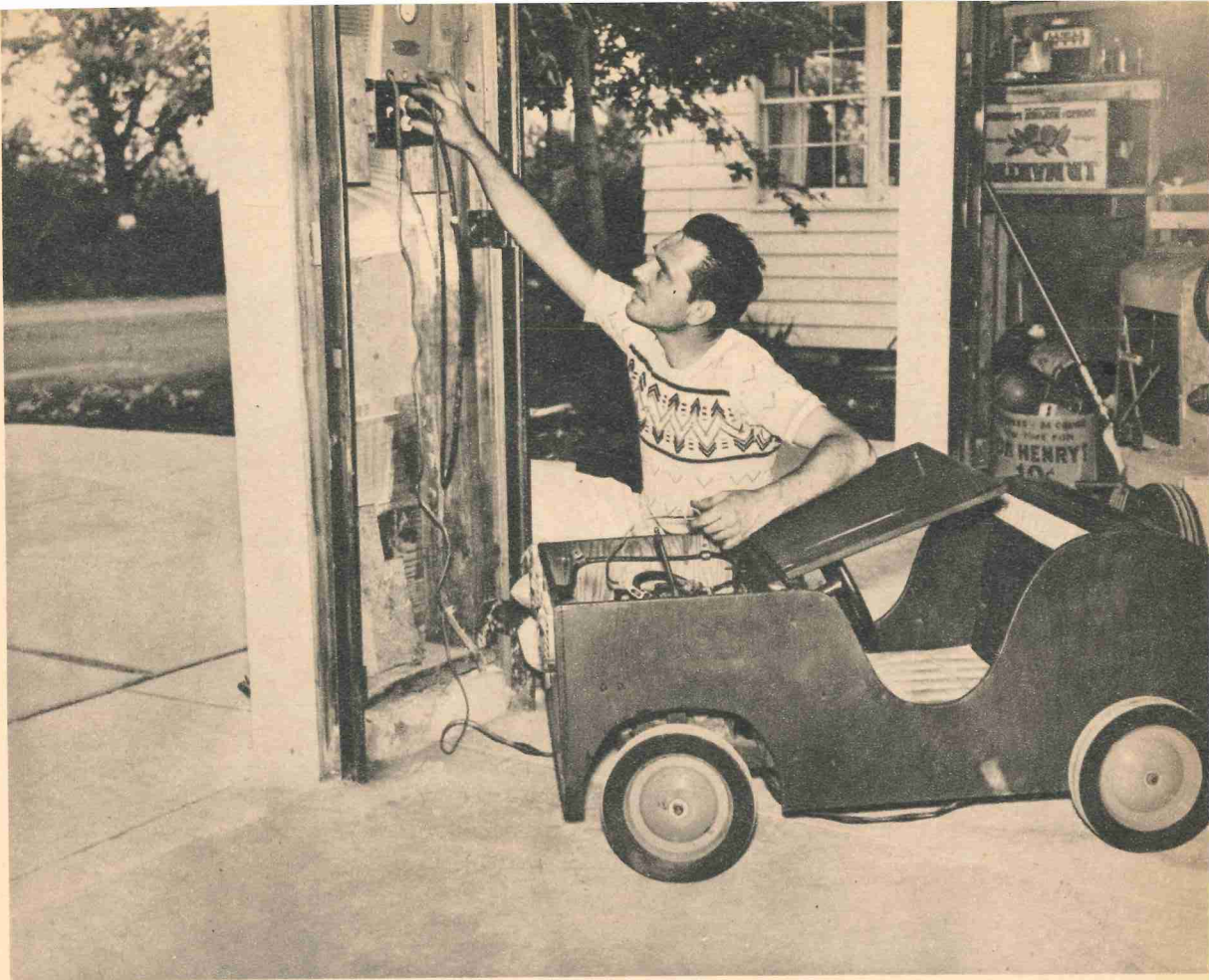
Here the builder assumed, and rightly



A PIANO HINGE was used for the back cover. Metal hood was cut from used steel drum, edges sanded smooth. Backrest hides starter motor, junction block and other mechanism.







**BATTERY SHOULD BE CHARGED** every three days. Car can be easily hooked up and set for charging. Hood over battery has hinged top. Seat board is padded as is the backrest.

so, that the weight of the car and at least one, two, or three youngsters riding in it would serve as an adequate brake on the motor's rpm. The first step in setting the car's speed at approximately 3 mph was to determine the number of wheel revolutions required to move the car at that desired speed. This was arrived at after the wheel diameter was determined. And, to make for simply figuring, the builder selected a 10-inch-diameter wheel. His arithmetic went as follows: He multiplied the wheel diameter (10") by pi (3.1416) to determine the wheel's circumference. Next he divided the number of inches in one mile by 60, the number of minutes in one hour. This answer gave him the total inches per minute the wheel must travel to go one mile per hour. Then

this figure was divided by 31", the approximate circumference of the 10" wheel, to determine the wheel rpm necessary to move the car at 1 mile per hour. Multiplying this figure by 3 gave him the wheel rpm for traveling 3 mph.

A starter motor is surprisingly powerful. However, it has to be to turn over a cold automobile engine on a wintery morning. As shown in one of the photographs, the builder included a trailer that can be hitched to the car. Continued heavy use of the car does tax the battery, but so far, under average daily playing conditions, the builder says one charging usually lasts two or three days. Recharging the battery is a simple job. It takes him about 30 seconds to hook up the charger, and he leaves it on over night. •



**PULL TOY**

3/16" DOWEL

BELL

13/4" 13/4" 7/8" 7/16" C.L.

DECALS MOUNTED ON 3/4" PINE

3/4" x 3 3/4" x 13 1/2" PINE

NAIL PIVOT

1/16" WIRE

RUBBER BAND SPRING BACK

LOCATE 5/8" FROM PLATFORM EDGE

3/4" x 1 1/4" x 1 1/2" LONG PINE (2)

3/4" x 1 1/2" x 7/8" PINE

3/4" PINE WHEEL 2 1/2" DIA. (4)

3/16" DOWEL 9 1/4" LONG

1/16" WIRE

3/32" WIRE

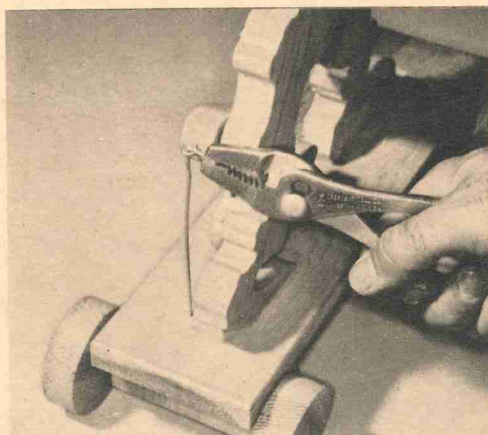
5/8" 5/8" 3/4" x 1 1/4" x 3 3/4"



By Rowan John

**T**HIS amusing toy will delight any toddler because it's packed with both sound and action. With each revolution of the wheels the clown at the rear raises his left foot and boots the one in front. The impact sends the kicked clown forward to whack the bell and then return to be booted again as the cycle continues.

The toy can be made from  $\frac{3}{4}$ -in. pine or other suitable scrap wood which you may have around the house. The clowns for the toy shown were made by using decals of television's Bozo the Clown. These are available at most of the larger stationery stores and other shops that



**BEND LOOP** in wire to secure leg of the kicking clown to the dowel connecting rod.

carry party and decorating supplies.

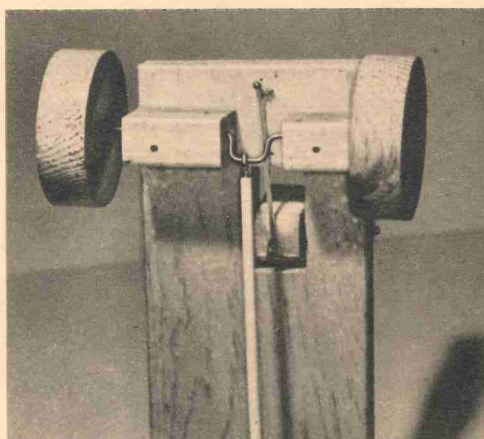
The decals are soaked in water and then applied to a piece of pine which has been pre-shellacked. The shellac provides a smoother surface than bare wood and the decal will take much better. After being cut to shape, the clowns should be shellacked again to protect the decal surfaces. When cutting the outline of the front clown, be sure to allow for that extension from the bottom of the foot. This will be pivot-fastened to the bed of the toy.

As an alternative to using decals, you can always sketch your own clowns or, using the squares-up method of enlarging, reproduce your clowns from the

photo on the left page. They can be painted most any color—and the brighter the better.

The wheels turn with the axles—not on the axles, which should rotate freely within the axle blocks. For both front and rear axles, use stiff,  $\frac{3}{32}$ -in. wire and fit snugly into the wheels. The axle blocks are glued and nailed to the bottom of the bed.

The mechanism that supplies the action is an offset crank on the front axle that transmits a reciprocating motion to the second clown's left leg by means of a lever. Turn the screw eyes at each end of the dowel connecting rod for fine adjustment.

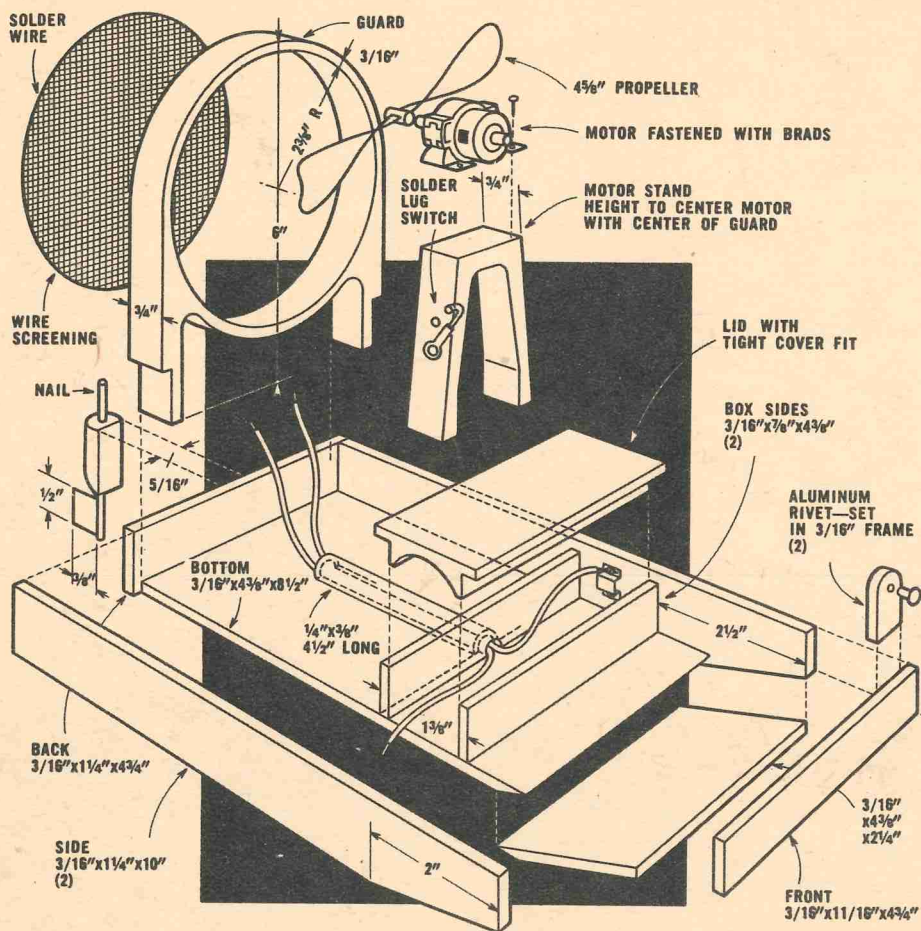


**OFFSET CRANK** on front axle produces the reciprocating motion which activates toy.

The front clown is returned to normal position by rubber-band tension. The pivot for this clown is provided by a  $2\frac{1}{2}$ -in. finishing nail. If the handle of that hammer proves too fragile, substitute a piece of metal rod.

**Note that** the front clown and the kicking leg of the rear clown, which is pivot-fastened to the fixed body by a nail through the hip, are positioned on center.

Enamel the wheels and bed of the toy with bright colors to resemble a circus wagon. Attach the bell and a pull cord and turn the gift over to a pre-school youngster. He's bound to get a boot out of it. •



# SWAMP BUGGY

By Emil P. Kushner

**B**ASED on the U.S. Army's version of an air-boat, with an airplane motor mounted at the rear of a flat-bottom boat, this toy makes a dandy father-and-son project.

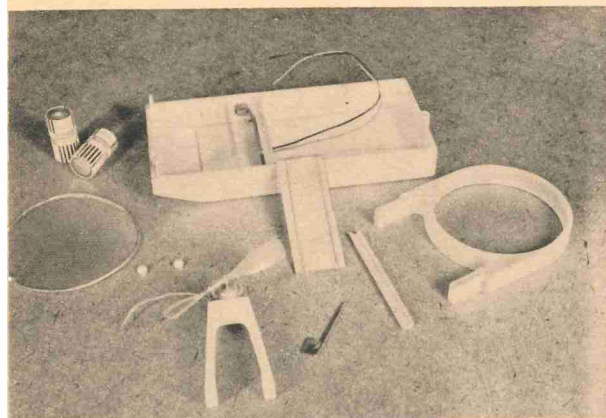
Construction begins with the hull, which is made from  $\frac{3}{16}$ -in. white pine stock. Using waterproof glue, assemble the hull as a lidless rectangular box. After the glue has dried, cut the bow taper and install the sloping bow piece to complete the basic unit.

Next, cut the propeller guard from

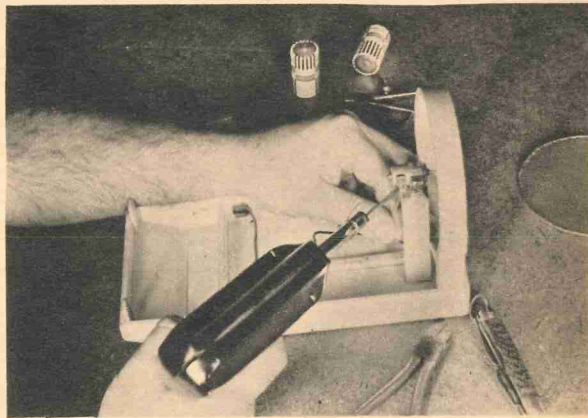
$\frac{3}{4}$ -in. stock and glue it in place. The motor mount also is cut from  $\frac{3}{4}$ -in. stock; its height is determined by the dimensions of the motor to be used—a  $1\frac{1}{2}$ - to 3-volt unit. The base of the motor mount should be about two inches across. The propeller itself can be cut down from a somewhat larger plastic or balsa propeller if you can't find one in the size specified.

The battery box is positioned to provide good balance for the boat when it is in the water. Set a copper clip in each end of the box as a battery contact and drill a hole in the rear of the

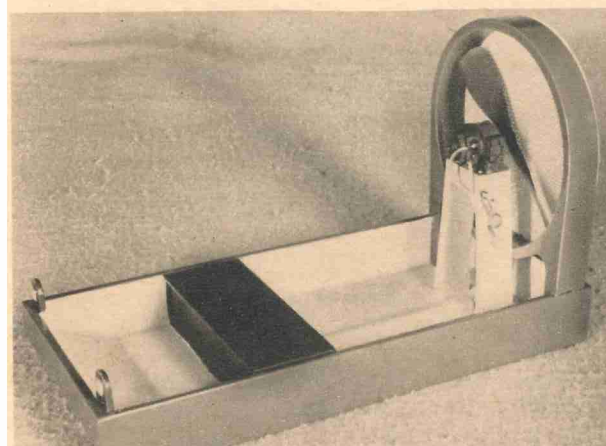




**CONSTRUCTION** of the swamp buggy is simple but take care to make it watertight.



**THE LEADS** from the battery terminals are laid in position and soldered to the motor.



**PROPELLER** can be made to push rather than pull by changing the polarity of the leads.



**RUDDER** can be adjusted to make the swamp buggy travel in a straight line or circle.

box through which to pass the wires. Lay the wires in position and conceal them under a grooved strip of wood glued to the deck. Cut the battery box cover for a tight fit.

Mount the motor and wire it to the leads, splitting one wire and making a switch from a soldering lug and two brads. The propeller shield is a piece of window screening, copper preferred, with a ring of copper wire soldered to the perimeter of the screen.

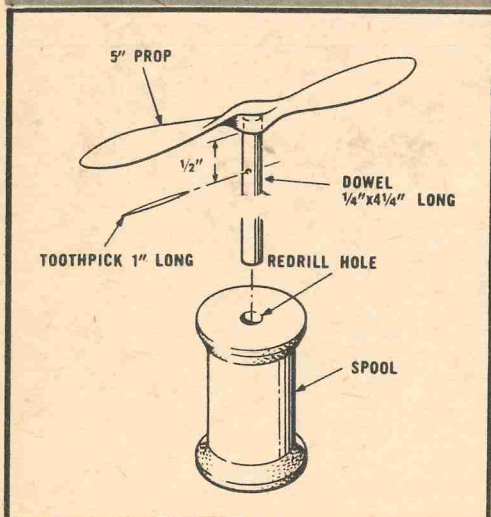
Movement of the boat in the water can be controlled by the angle of the rudder, which is a piece of tin soldered

to a finishing nail and fitted snugly in a small block mounted in the rear of the boat.

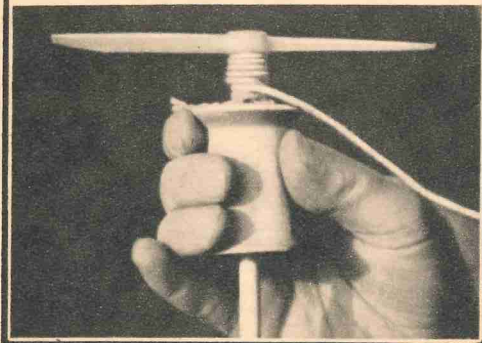
**This completes the swamp buggy** except for painting. Sand the entire toy and give it two coats of shellac to prevent the wood from absorbing moisture. Sand again and apply several thin coats of lacquer in the colors desired. Headlights are aluminum rivets set in the wooden headlight frames.

When sailing the boat, you can attach a length of string to the rudder post as a control line to keep it from straying too far from shore. •

# FLYING TOP



WITH cord wound around upper shaft, hold onto spool and give a quick yank.



**A** TRADITIONAL TOY, this high-flying top consists of nothing more than a short length of dowel, a small prop and a spool. A cord wound around the upper part of the shaft, just below the prop, serves as the impeller. A quick yank will send the top soaring to a height of about 100 ft. After reaching its peak, the top will spin lazily to earth.

Cut the dowel to size, then drill a small hole near one end to hold a toothpick, as shown. Next, take the prop and redrill the hole for a tight fit over the shaft. Apply a little model cement to prevent the prop from working loose and press firmly into place. Dab some cement on the toothpick joint also.

The size of the spool is not important, provided the hole through it is large enough to prevent binding against the dowel. Redrill if necessary. You can add to the effectiveness of the toy by painting a colored spiral around the spool. Rub a little paraffin on the top surface of the spool and on the dowel to reduce friction and the top is ready for the flight line. •

—J.C.



# WHIRLING SAUCER

**S**AUCEER RIDE, teeter-totter, wagon and sand box are combined in this backyard amusement device—a four-way fun toy for ages 3 to 13.

For materials you will need two 4x8 sheets of  $\frac{3}{4}$ -in. exterior-grade plywood, a 4x8 sheet of  $\frac{1}{8}$ -in. Masonite tempered hardboard and four double ball-bearing casters.

Cut the base, the bottom of the saucer and the two rings from  $\frac{3}{4}$ -in. plywood. The sides of the saucer are formed from the hardboard.

Assemble the saucer, using water-resistant glue and screws.

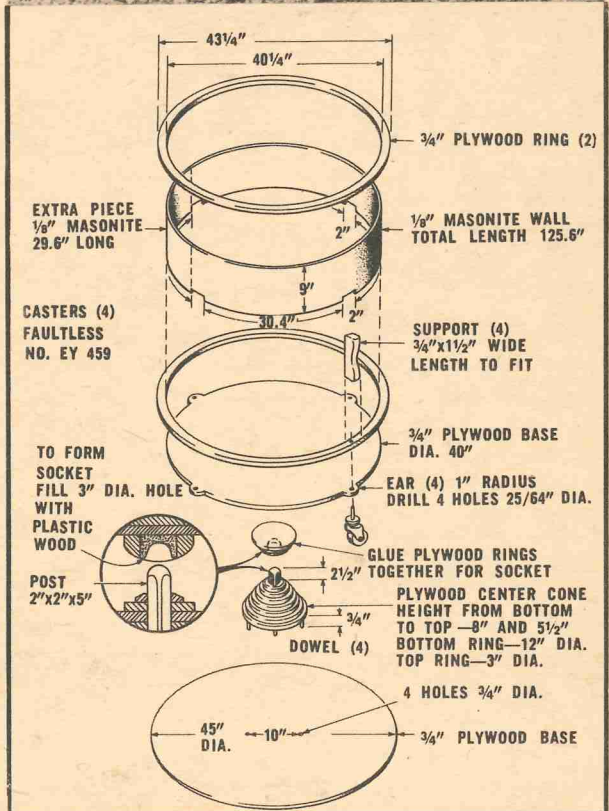
The cone on which the saucer turns is constructed from graduated rings cut from plywood scraps. Glue these together and build up to the desired height around the center post-pivot. Use a rasp and sandpaper to shape the pivot head.

Make up two different size cones: a low one for toddlers and a higher one for youngsters who might enjoy a wilder ride. These cones can be installed with dowels for easy switching.

Form the socket with plastic wood as shown and attach to the saucer bottom.

Finish the saucer in bright colors and turn it over to the youngsters. They'll love it. When not whirling, they'll be using the saucer as a see-saw. They also will find that the saucer can be taken off the base and used on smooth surfaces as a wagon and an easily maneuvered sand box.♦

—Henry B. Dabkowski





**THIS WHEELBARROW** is sized for boys of 4 to 8. Project is all of plywood except for the handles, but the wheel can be made of hardwood, or you may prefer to buy one of metal.

## Junior Wheelbarrow

**C**HILDREN love toys that let them simulate grown-up activities. A wheelbarrow is always a favorite. This one is easy to build and quite sturdy despite the fact that wood is used for the wheel. If this bothers you, substitute a metal wheel that you can salvage from a discarded toy, or buy one. Maple could be used for the wheel instead of plywood, or you could rim the wheel with an aluminum or copper band, attaching it with contact cement.

Start off by cutting the base of the barrow to size, beveling the leading edge 30 degrees. Make a layout for the shape of the sides (the contour does not have to be exact) and attach them with glue and 2-inch finishing nails. Cut the front to size and bevel both top and bottom edges 30 degrees. Glue and nail this in place.

Make the handles, shaping the leading and trailing edges by following the

details in the drawing. Be sure to sand the trailing edges very carefully. Use a rasp to round off all the corners, then follow with sandpaper to guarantee no splinters.

Shape and nail on the feet, then lay out the position of the handles on the underside of the barrow-base and attach them by nailing through the top side. The handles are parallel to the sides of the barrow and separated at the front just enough to receive the wheel and two heavy washers.

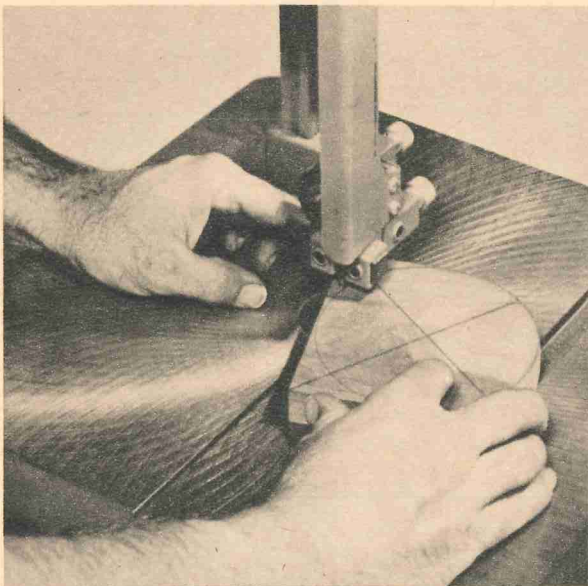
We used a dowel as an axle with nails driven through it to keep it from slipping out. A ½-inch bolt would do as well.

Sand all parts carefully; round off all edges. Whether you want to leave the project natural or wish to paint it in gay colors, be sure to use a good penetrating sealer first. •

*R. J. DeCristoforo*



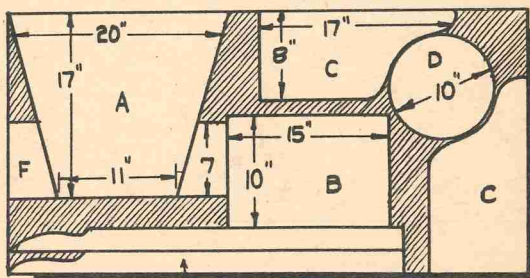
**THE BANDSAW** is a good tool for cutting out the wheels. Or you could use a jig saw. Cut wheel carefully and sand to perfect circle.



### MATERIAL LIST

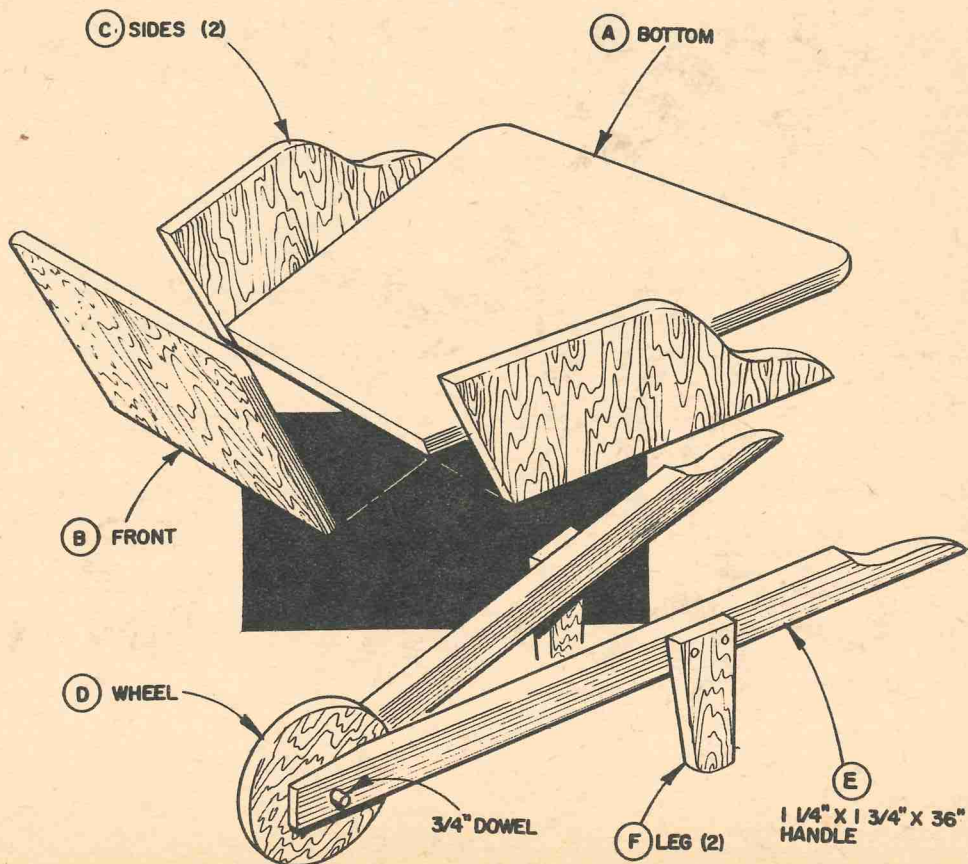
- (A) 1 piece  $\frac{3}{4}$ " x 17" x 20"
- (B) 1 piece  $\frac{3}{4}$ " x 10" x 15"
- (C) 2 pieces  $\frac{3}{4}$ " x 8" x 17"
- (D) 1 piece  $\frac{3}{4}$ " x 10" diameter
- (E) 2 pieces  $1\frac{1}{4}$ " x  $1\frac{3}{4}$ " x 36"
- (F) 2 pieces  $\frac{3}{4}$ " x 3" x 7"
- 1 small length  $\frac{3}{4}$ " dowel

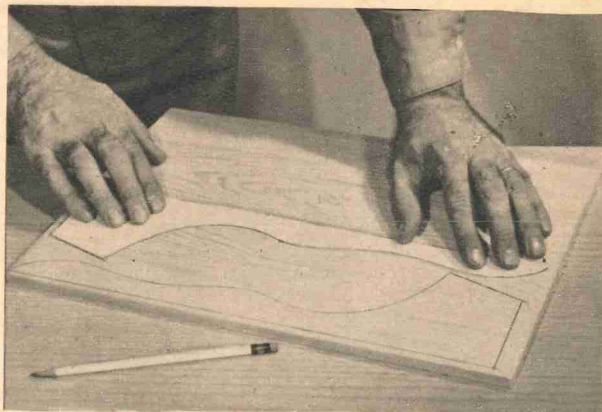
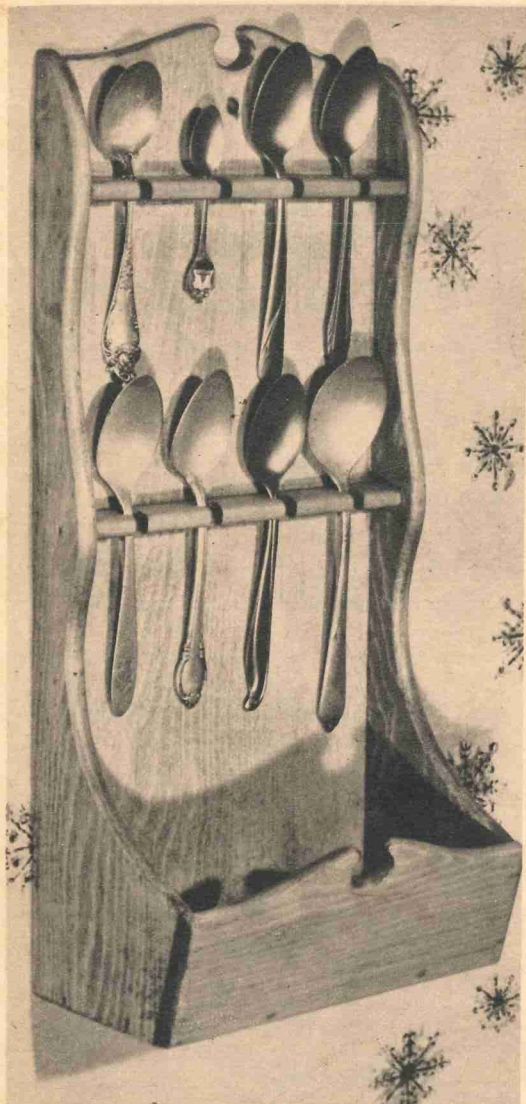
All parts are cut from fir plywood except the handles which are cut from solid stock



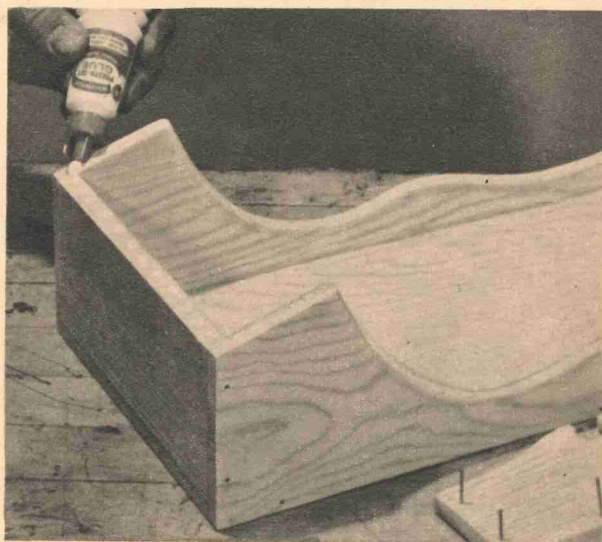
(COULD BE HANDLES)

$\frac{3}{4}$ " X 2 FT. X 4 FT. EXTERIOR PLYWOOD





**MAKE** templates of the scalloped edges and transfer outlines to the clear pine, interlocking side pieces to save stock. Assemble all parts with glue and brads, wiping off excess glue before it dries.



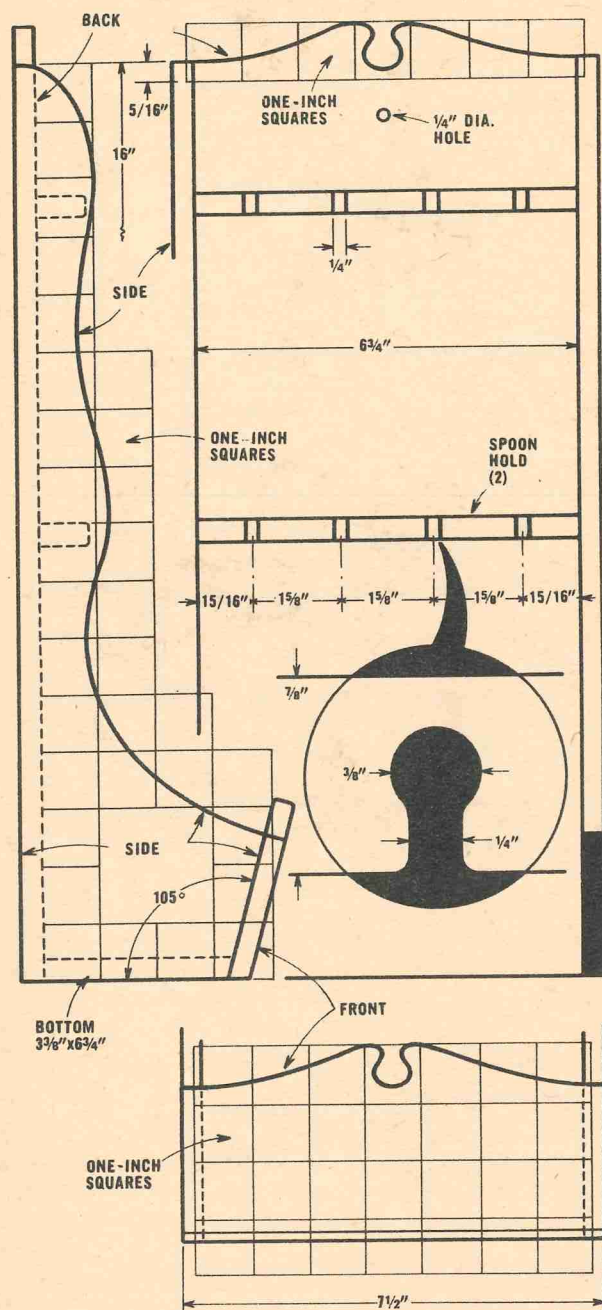
# Colonial Spoon Rack

**BY**  
**JOHN**  
**CAPOTOSTO**

**H**UNG on your kitchen or dining-room wall, a Colonial-style spoon rack makes a fine conversation piece and adds to the decor of your home as well. The one presented here is slotted for eight spoons, with room for more in the tray at the base.

Spoon-holders no longer are meant to hold everyday silverware, their function in Colonial times. Instead, they are used to show off unusual and purely decorative pieces, such as heirloom items handed down from mother to daughter.





**SPOON RACK**

MAKE FROM 1/2" PINE, PLANED DOWN TO 3/8"

A 6 3/4-in. width is specified on the drawing, but this may be increased should you want to display more than eight spoons.

**Make the rack** from 3/8-in. clear pine planed down from half-inch stock. Choose a piece free of warp and relatively straight-grained.

To simplify construction, cut paper templates for the scalloped edges and trace the outlines on the wood. Use a jig saw or band saw to cut all pieces to shape. Then sand smooth.

Bevel the front edge of the bottom piece and the bottom edge of the front piece at an angle of 15°. Make a trial cut on a piece of scrap wood to make sure you have the correct angle.

**Keyhole slots** to hold the spoons are made by drilling the hole and then cutting out the neck with a saw. You may have to adjust the widths of these openings, depending on the dimensions of your spoons.

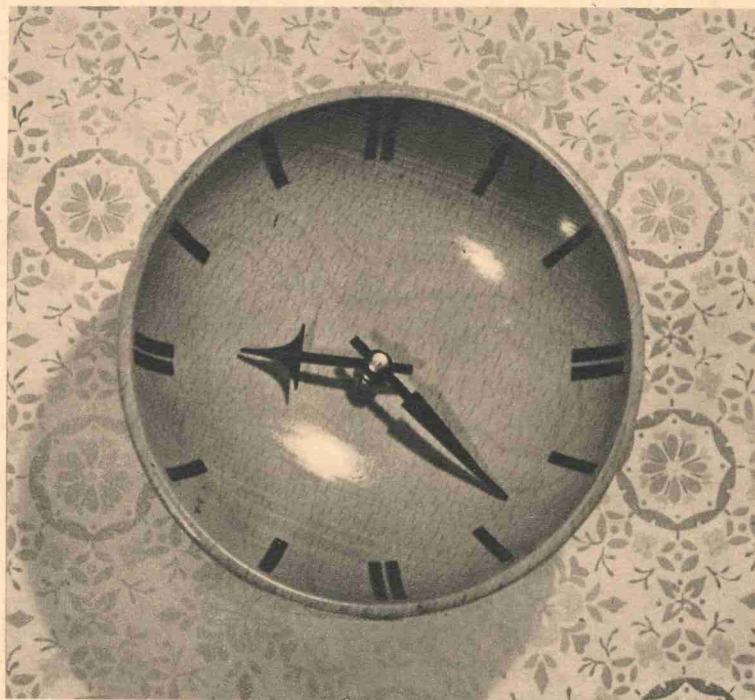
The edges of the rack can be rounded with a router or by hand-filing or sanding. The router, with a quarter-inch round cutter, will produce a neat job with less effort.

**Assemble all parts** with glue and brads, sinking the nail heads. Finish with two coats of orange shellac. When dry, burnish with fine steel wool and paste wax. Nail holes can be concealed with matching stick putty.

If you're not already a collector, this spoon rack could give you the incentive to become one. •

# BATTERY — OPERATED CLOCK

BY  
JOHN  
CAPOTOSTO



*No winding, no wiring—this transistorized clock runs a year on two penlight batteries.*

**T**HE CLOCKS shown on these pages—or a simple one of your own design—can be put to use in the kitchen, den or any other room of your house without an unsightly electric cord trailing down the wall. These clocks carry their own power supply, in the form of two penlight cells or a single C cell which need be replaced only about once a year.

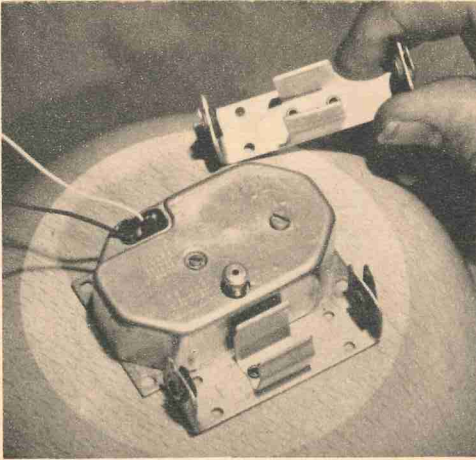
The advantages of such a clock are obvious. You can hang it anywhere without the usual dangling wire and you need have no electrical outlet

nearby. Boat owners and electricity-less cottage or cabin owners should find these clocks especially welcome.

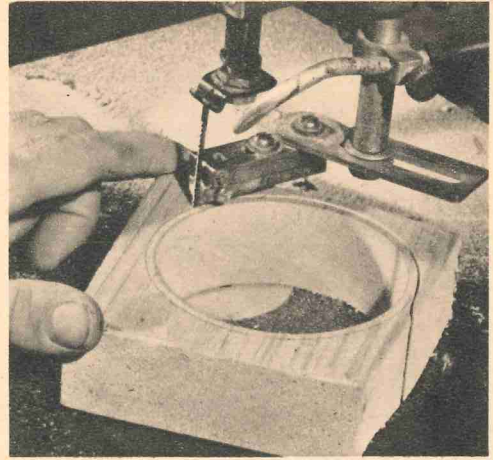
The clock featured was made from a wooden salad bowl—the type available at most five-and-tens. Sizes vary, so select one to suit your particular needs. If the bowl has a lip at the bottom, remove it so the movement and battery holders will lie perfectly flat.

Locate the center and drill a  $\frac{5}{16}$ -in. hole for the threaded stem. Some bowls have a thick bottom so be sure to remove sufficient material to allow at least

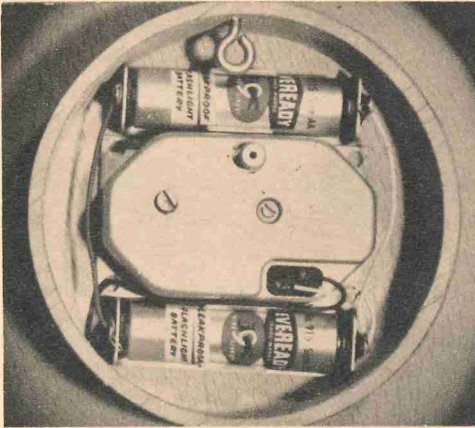




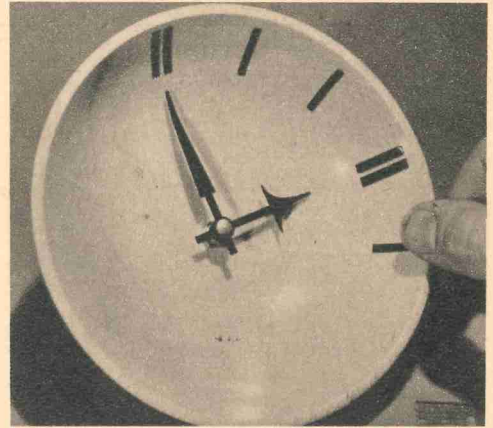
**BATTERY HOLDERS** are attached with epoxy cement to eliminate screws on dial.



**FRAME** for movement and batteries is cut on jig saw. Square frame also could be used.



**REAR VIEW** shows movement and batteries installed. Screw eye is used to hang clock.



**STRIPS** of narrow black vinyl electrical tape are used to indicate dial graduations.

three threads to protrude through to the front or face.

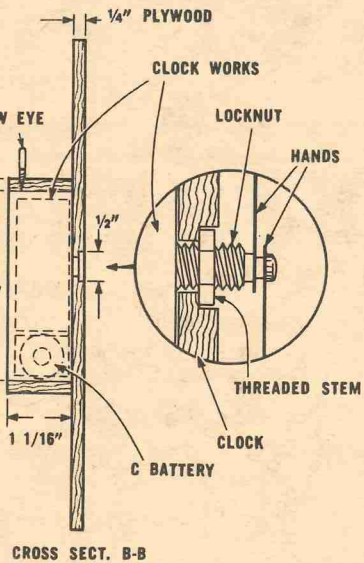
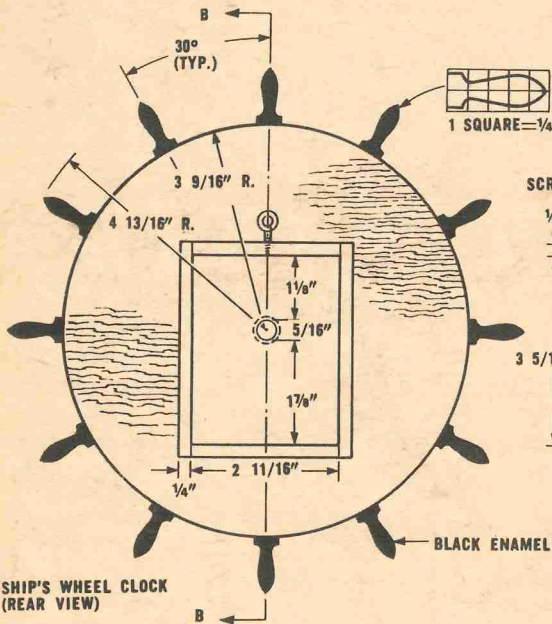
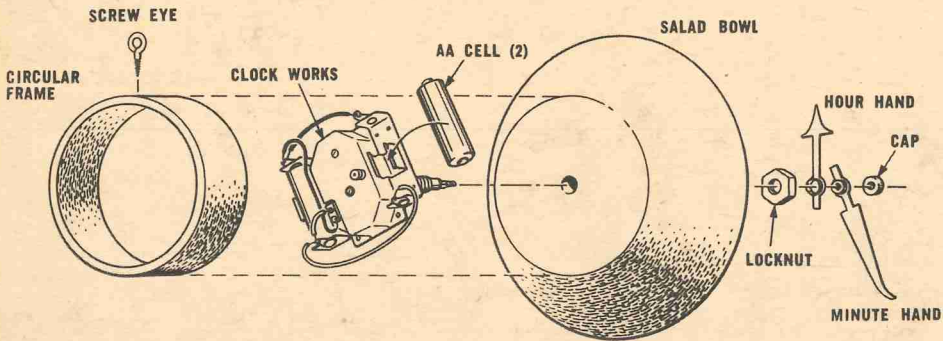
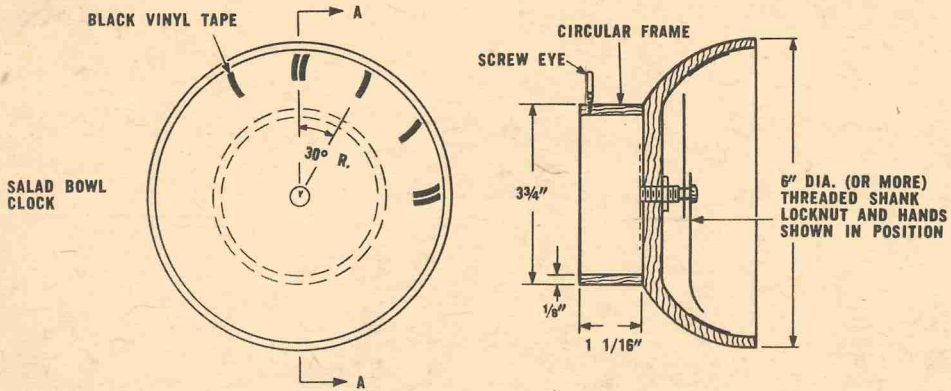
The transistor movement is enclosed in an aluminum shell with battery clips attached, but for a more finished look a circular wooden frame can be made to enclose the installation. The bowl pictured measures six inches across the face and only  $3\frac{3}{4}$  in. at the base, so we used two AA cells rather than the single C cell. These were wired in parallel to keep the voltage at  $1\frac{1}{2}$  volts.

To simplify numbering the face, we used strips of narrow black vinyl tape.

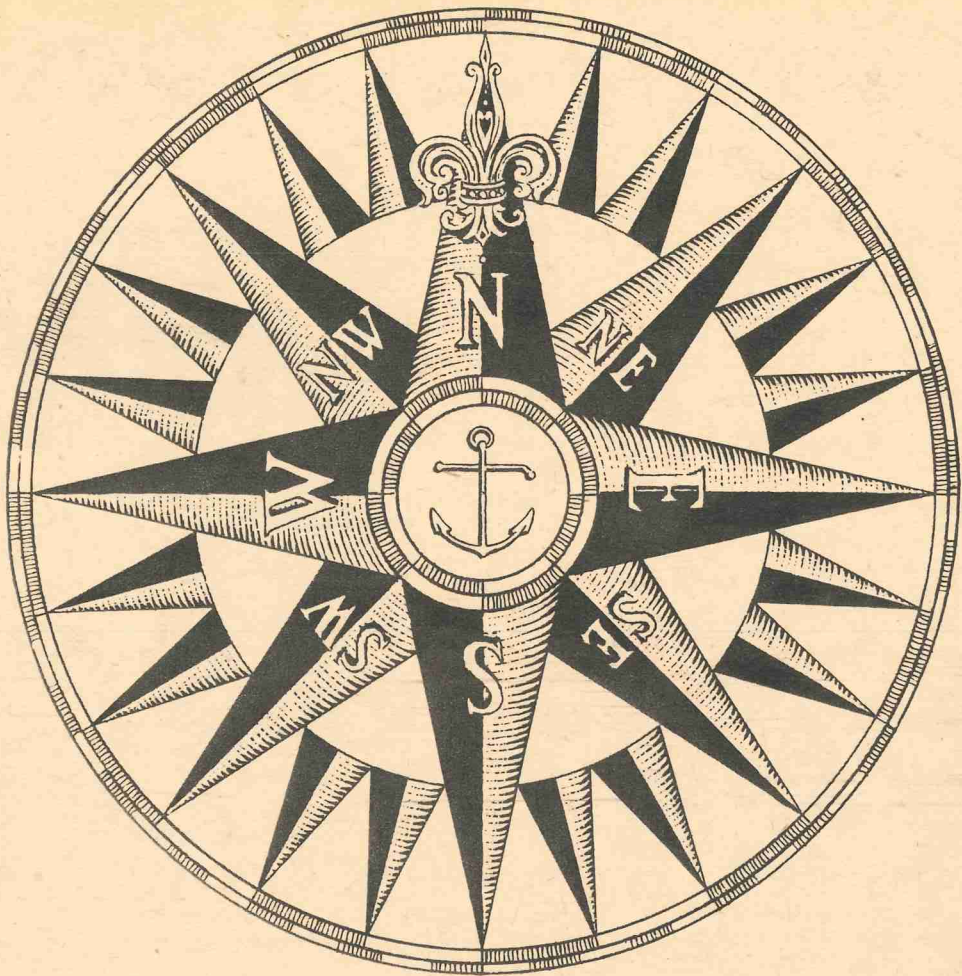
Decal numbers also could be used. To locate the positions for the numbers, assemble the clock and line up the minute and hour hands. Mark this position lightly, then rotate the minute hand one full revolution. This will advance the hour hand  $30^\circ$  (one-twelfth of a circle). Mark and repeat until all 12 positions are located.

If either of the clock hands brushes against the bowl, bend it enough to ride free. The hands used for the salad bowl clock measure  $3\frac{3}{4}$  in. from the tip of one to the tip of the other; the hands

CROSS SECT. A-A



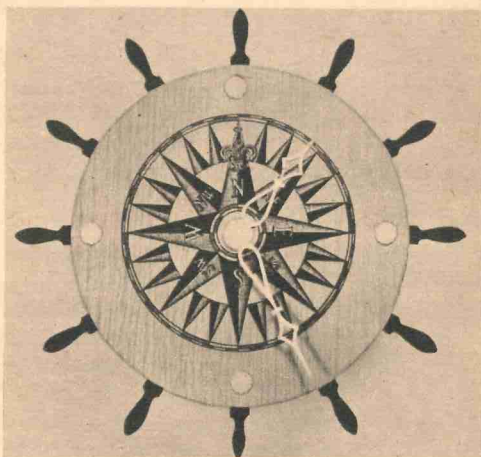




used on the ship's wheel clock measure six inches over-all.

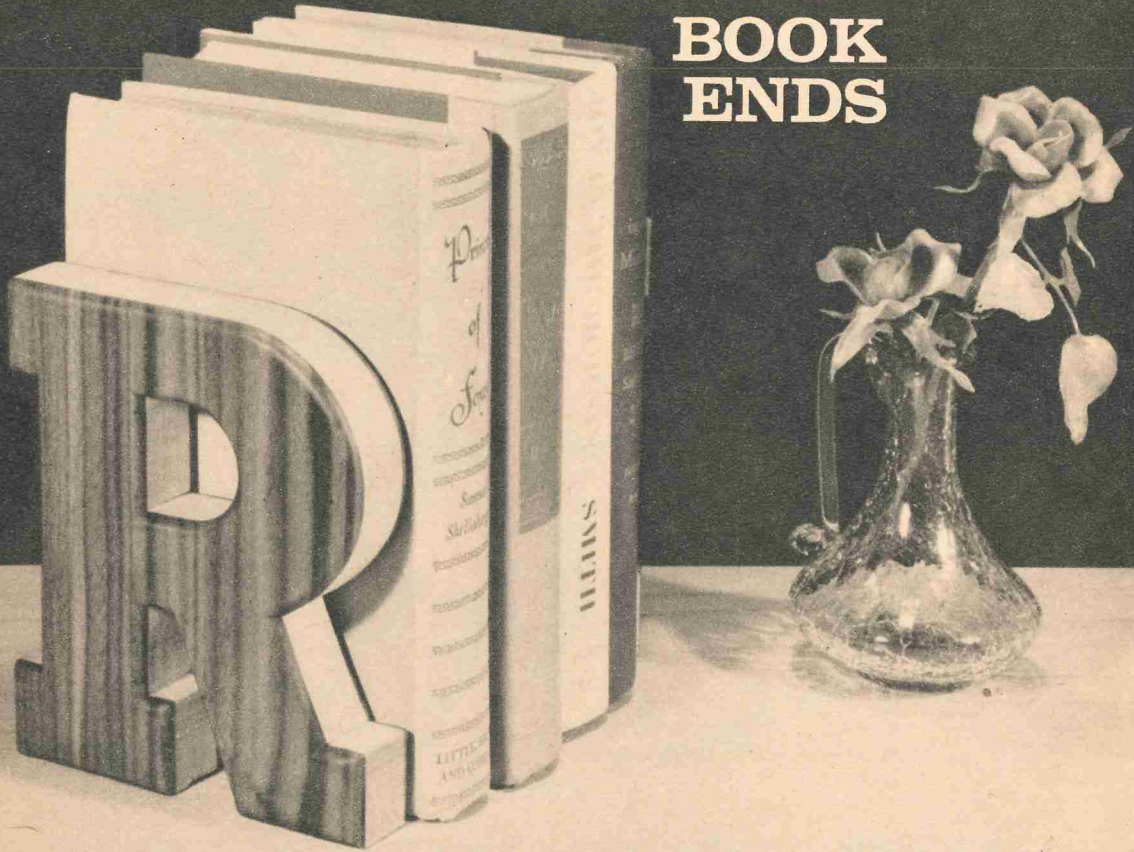
The ship's wheel is made similar to the bowl except that larger hands are used as well as the C cell battery holder, which is part of the clock movement kit. The handles of the wheel represent the numerals; be sure to space them evenly. Use a fine blade when sawing the outline to assure a smooth cut. Round all edges with sandpaper, then paint the handles with black enamel. The compass rose design can be traced full size from the drawing on this page. For a striking effect, try it in bright colors.

The transistor clock movements used here are made by Westclox and are available at \$7 each, postpaid, from the Armor Co., 36-23 164th St., Flushing, N. Y. 10058. •



COMPASS ROSE design for the ship's-wheel clock can be traced from the drawing above.

# INITIAL BOOK ENDS



*You'll find these laminated book ends a capital addition for*

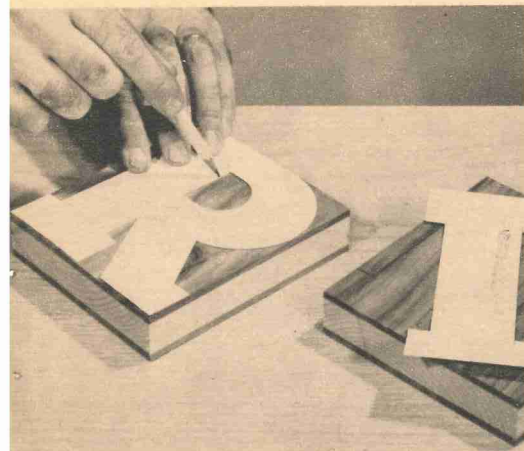
**B**OOK ENDS in the form of capital letters cut from maple laminated with richly grained walnut make attractive additions to any mantel or desk top. The initial design makes them especially useful in a school dorm or children's room where they can be used to separate books and indicate ownership.

Gothic letters are offered here, since they are comparatively easy to draw

and cut to shape, but you may choose any style you fancy, even an Old English face. If you see some attractive type in a magazine or newspaper advertisement, make templates of the desired initials by the enlarged-squares method.

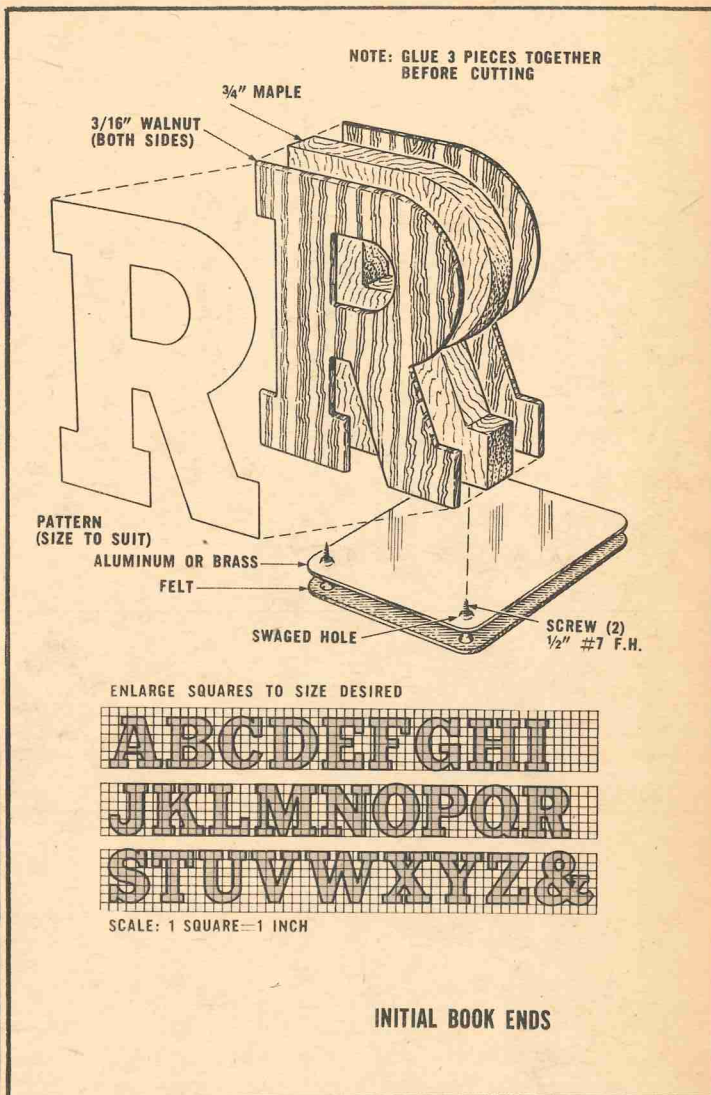
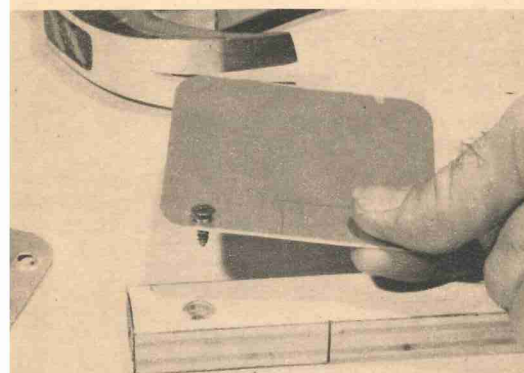
**Laminate both sides** of the three-quarter-inch maple core, keeping the best surface of the walnut to the outside. Clamp the wood securely until





TRACE outline of the initial on the laminated block, using a soft pencil to leave dark guide line.

POSITION metal base over hole countersunk in hardwood, tap screw with a hammer to swage.



*any mantel or desk top and as easy to make as A-B-C.*

the glue dries. In addition to the two-tone effect achieved, the laminations reduce warping and give the book ends an attractive bulk.

Transfer the design to the laminated block and cut to shape. This can be done best with a jig saw, especially where interior cutouts are involved. Sand to remove saw marks and round off all edges. If you have a router, this can be done neatly and quickly with

a quarter-round cutter. However, you'll have to tackle inside corners with a chisel.

Bases are cut from .020 hard aluminum or brass. Drill holes and attach the metal to the bottom of the letter as shown, swaging or dimpling the holes. Glue a piece of felt to the underside of the metal to protect furniture and help anchor the book ends. Capital, aren't they? •  
R. J. Capotosto



A VERSATILE vase, appropriate for either buds or flowers and adaptable to any decorating scheme, makes an interesting lathe project. The vase has been designed around an eight-inch test tube, which holds the water for the flowers. Any hardwood that matches your decor could be used. We used cherry, with the vine and leaves of walnut.

A nine-inch turning square four inches thick is the starting point of the vase. Mark the center of one end of the square and drill the cavity for the test tube with a brace and bit. Then sand the inside of the hole with a length of sandpaper wrapped around a dowel until the test tube just fits.

If you have difficulty obtaining the test tube there is another method that can be used to make the vase waterproof. Fill the hole to the top with lacquer or varnish and let it sit until the lacquer has had a chance to seep into the walls of the hole. Empty the cavity and let dry. Repeat this procedure until several layers have built up.

Turn a tapered plug to fit the top of the hole, using scrap wood. Fit this plug in place and mount the block between centers on your lathe. The templates for the initial cuts can be made from the

## LATHE-TURNED FLOWER VASE

*Fresh flowers brighten up any room and you can show them off to best advantage in a graceful vase you turned from hardwood.*

By W. & E. Waltner



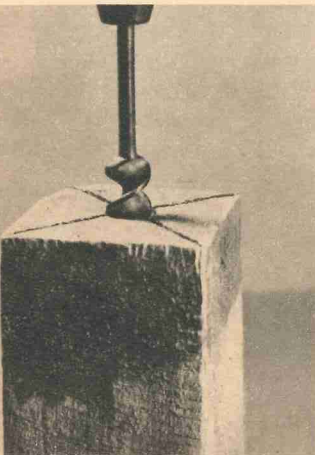
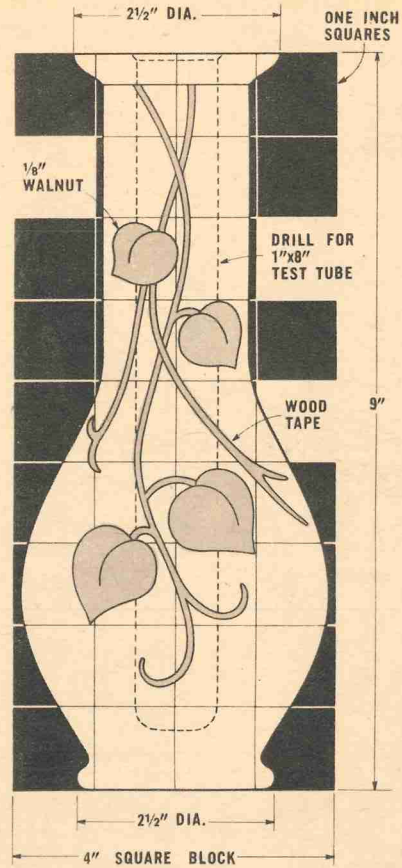
## TURNED HARDWOOD VASE

diagram on this page. After having made the initial cuts, trim the excess wood, leaving the slender shape of the vase intact. Now sand to final shape, taking particular care that the vase remains symmetrical.

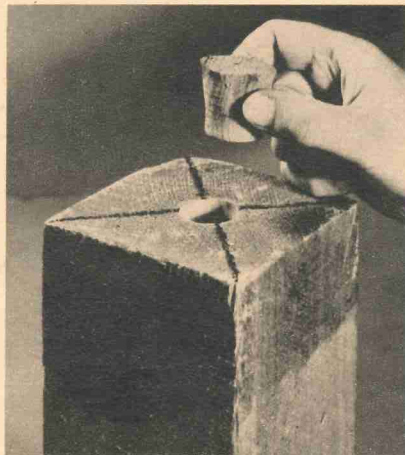
The decorative vines are cut from wood tape. It is cut easily with scissors and will conform to the contour of the vase when glued in place. The leaves are cut from  $\frac{1}{8}$ -in. walnut. Carve out the back of each leaf to fit the curve of the vase. Then carve the face of each leaf in relief, cutting in to form the center vein and rounding the edges for a natural look. Glue the vine and the leaf stems in place with the edges fitted snugly together so the joints are invisible. Glue the walnut leaves in place at the ends of the stems.

To finish the vase in high gloss, use several coats of lacquer over everything, vines and leaves included. This also prevents the vines from coming loose and spoiling the appearance. A piece of felt glued to the bottom protects your furniture from scratches.

Now that your vase is finished, you should have no trouble finding a place for it in your home. As a centerpiece for the table or a complement to the mantel, your vase will draw praise anywhere. •



**MARK** the center of the block at one end and bore out the cavity for the test tube with brace and bit.



**A TAPERED** plug, turned from waste material, is fitted into the top of the hole before the block is mounted between lathe centers.



**WATER** for the flowers is held in an 8-in. test tube slipped into the hollowed-out cavity in the block.

# S

*Bring sunshine into the house  
and make washday more of a pleasure  
with a compact back-yard dryer.*

## CLOTHES DRYER

By R. J. Capotosto

**T**HERE'S nothing like fresh air and sunshine for drying clothes. To take full advantage of these bounties of nature, build our trim back-yard dryer, which can be left up year-round. Made from Reynolds Do-It-Yourself Aluminum, it is strong, will not rust and revolves at the flick of a finger.

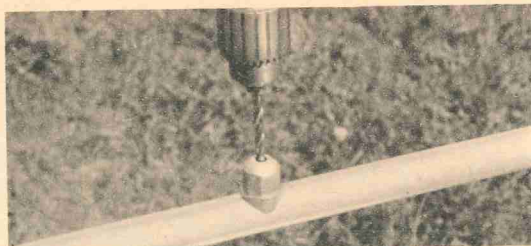
For a stronger, neater appearance, the upper structure of our dryer—unlike most commercial models—is non-collapsible.

**Materials required** are .36 ft. of one-inch tubing, 8 ft. of 1¼-in. tubing, 24 ft. of ⅜-in. solid rod, eight T-butt connectors and 16 pan-head self-tapping screws.

Begin construction by cutting all elements to length. A tubing cutter will produce a clean, square cut with no further attention beyond removal of the burr. If a hack saw is used to make the cuts, it will be necessary to file the ends.







T-BUTT connector can be used as a bushing to facilitate drilling of holes in aluminum tubing.



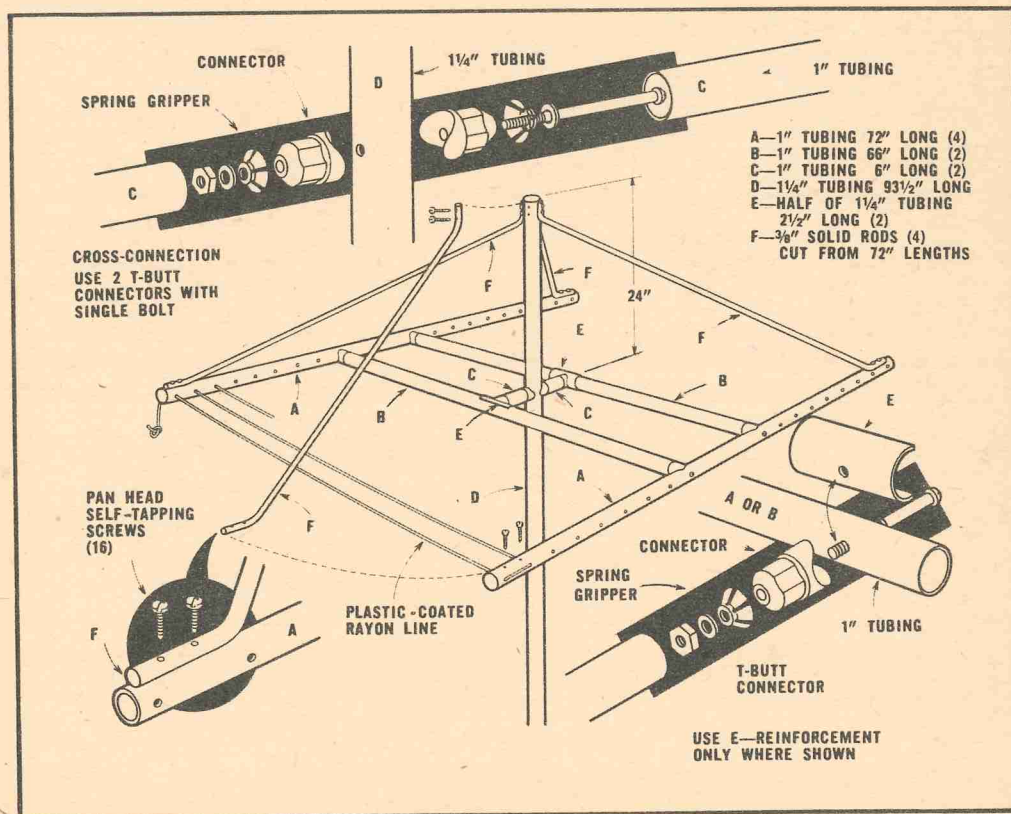
CROSSARM connection is improvised by using two T-butt connectors joined by a single bolt.

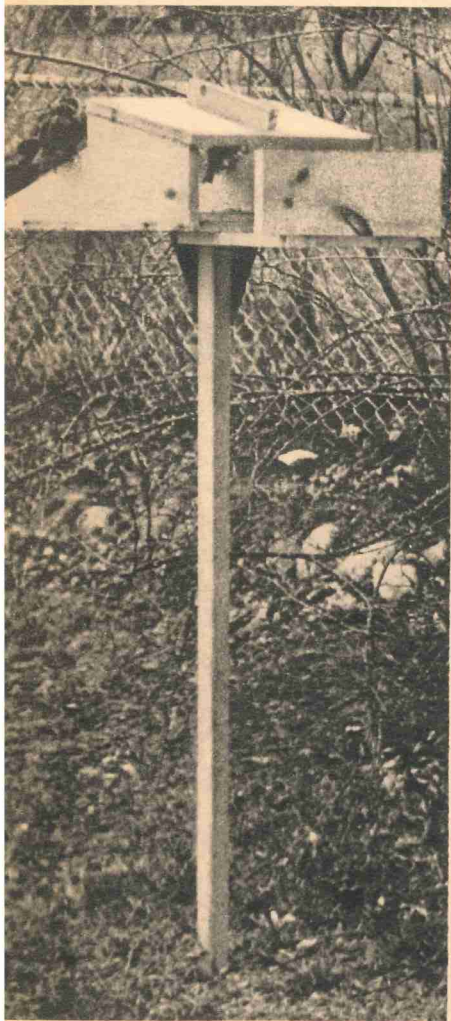
Next locate and drill all hole positions. The holes for the connector bolts must be countersunk. This can be done by inserting a short bolt and striking it with a hammer.

The crossarm which connects the upper structure must be improvised since Reynolds does not produce cross-fittings. This can be accomplished by using two T-butt connectors with a single bolt between them, as shown.

After assembling the frame, weave plastic-coated rayon line through the holes in the two arms. This type of line is recommended because it is durable and will not stretch. Holes for the line are quarter-inch and are spaced approximately three inches apart.

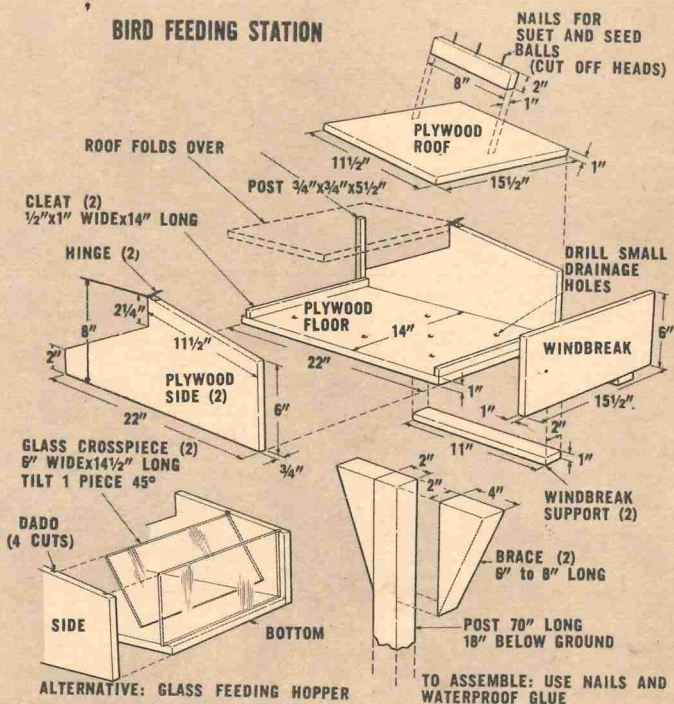
The ground box consists of a 12-in. length of 1½-in. galvanized pipe sunk into the soil slightly below grade. •





# for the BIRDS

*Treat your friends to a feeding station!*



LIKE their human counterparts, the singing stars of the bird world get plenty of attention when they're going full-tilt in summer. But come winter and they're likely to be forgotten. Not enough of us remember to feed our feathered friends when they need it.

Feeding stations can be simple, like the one shown here, or pretentious and the birds scarcely could care less. They come for the vittles.

Most of the construction details for our feeder are shown in the drawing. The 2x2 post should be sharpened and driven into the ground. The completed feeder then is mounted on the post and the already-attached braces with long

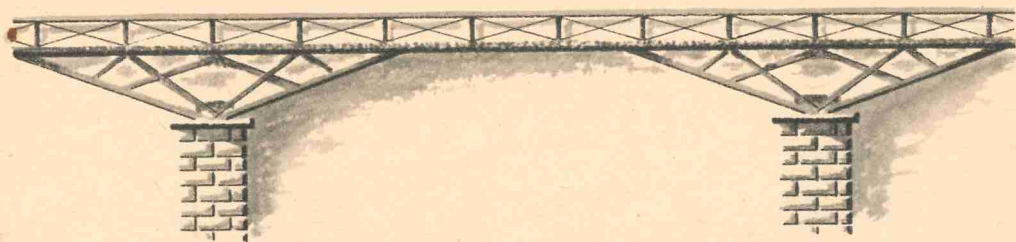
screws. Put out seed and suet or seed cakes—and expect lots of company.

The station shown was the scene of several experiments. It was found that more birds fed when the structure was simplest, having the elementary windbreak and seed scattered on the floor. The alternative design with feeding hopper is neater and handier for the homeowner but it tends to make the inside of the structure dark. Birds then spend much more time looking for predators than feeding. The more wary birds stay away.

The experts say birds don't care whether a feeding station is painted or not. Ours remains unpainted. • R.G.B.



# TRESTLE-TYPE



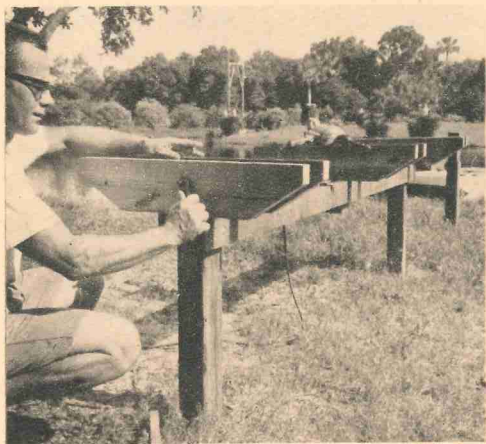
## PICNIC TABLE

*Start planning your summer barbecue fun with this king-size picnic table made of weather-resistant redwood.*

By Hal Kelly

**H**OW one-unit picnic tables and benches came into use with the homeowner is a mystery. The idea is great for public parks—it's harder for someone to walk off with the benches—but in your backyard they're a nuisance.

The trestle-type table however, makes things simple. It offers plenty of leg room and you can move the benches and use them somewhere else without having to drag along the table. Since the table has only two legs, it's that much easier to mow the grass around it.



**CROSS ARMS**, two for each leg, rest atop the redwood 2x4s, support the table top.



**SIDE RAILS** should be nailed to ends of cross arms before putting down top boards.

**Construction** is simple. The table is ten ft. long and 30 in. high, with each of the four benches five ft. long and 18 in. high. The nice thing about these dimensions is that in ordering boards for the top of the table and benches, you can get ten pieces, each ten ft. long, and have no waste.

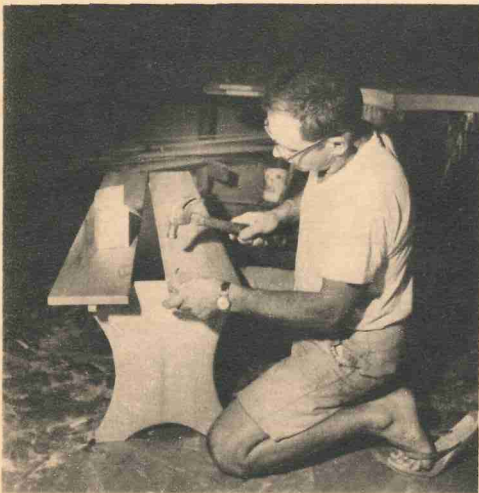
The two table legs are 4x4-in. treated posts, about 4½ ft. long placed seven ft. apart and set in concrete two ft. deep. Give the concrete a few days to set before starting work on the table.

When the posts are set they should



**SHAPE** legs for two benches at once. Nail four legs together, cut them on band saw.

be notched near the top on each side to a depth of  $\frac{3}{4}$  in. The ten-ft.-long 2x4s that run the length of the table and support the top will be set in these notches and bolted with  $\frac{3}{8}$ -in. carriage bolts, one bolt to each leg. Notice that between the two real legs is a false leg. This also should be notched and bolted between these 2x4s. With the legs set and the long 2x4s bolted in place, you're ready for installation of the cross arms—on



**ASSEMBLE** benches via same procedure as used on table. Side rails first, then top.

which the actual table top will rest.

The cross arms are made of 28½-in. 2x6s. These pieces are set atop the 2x4s and bolted to each leg. Use a cross arm on each side of each leg, making a total of six arms. Note the angle-cut at each end of the cross arms.

**The table top** (and bench tops) are made of 1x8 redwood. Two of the ten pieces of 1x8s are cut lengthwise into thirds and are used for side rails along the benches and table. First, nail the side rails to the ends of the table's cross arms. Then nail down the top pieces. In fastening down the top, leave about  $\frac{1}{4}$



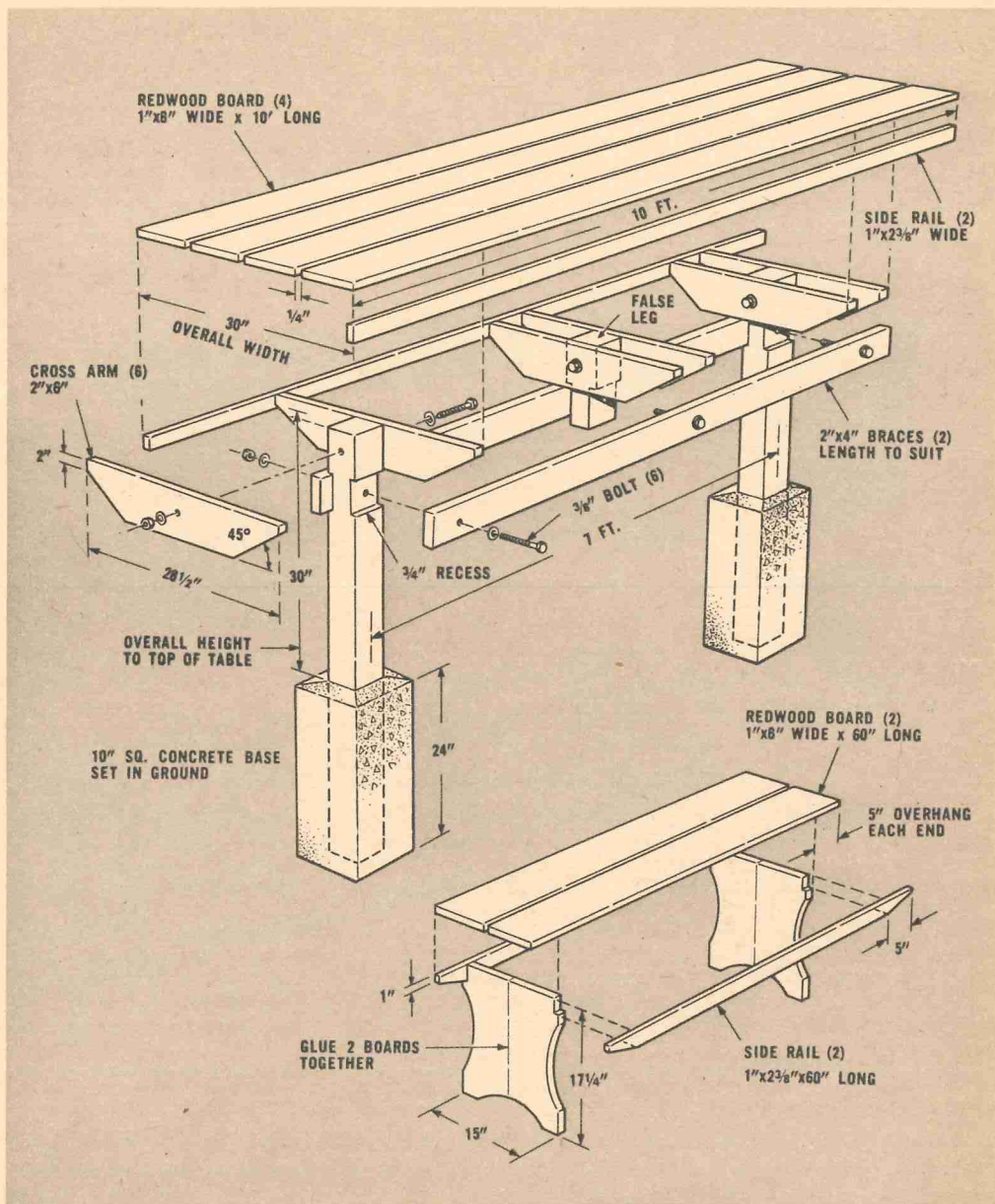
**TRESTLE-TYPE** construction lets you mow around legs, use benches elsewhere.

in. of space between the boards so the top can expand or contract with the weather, and nail the two outside boards of the top to the side rail pieces about every 14 in.

For fastenings, it's good to use 1½-in. No. 12 silicon bronze Stronghold annular thread nails. You can use this size in redwood without having to drill pilot holes. They're good looking and long-lasting.

**The benches** are easy to make. There are only two legs to each of the four benches. You can cut the legs for two benches at a time if you plan it properly. Each leg is composed of two red-





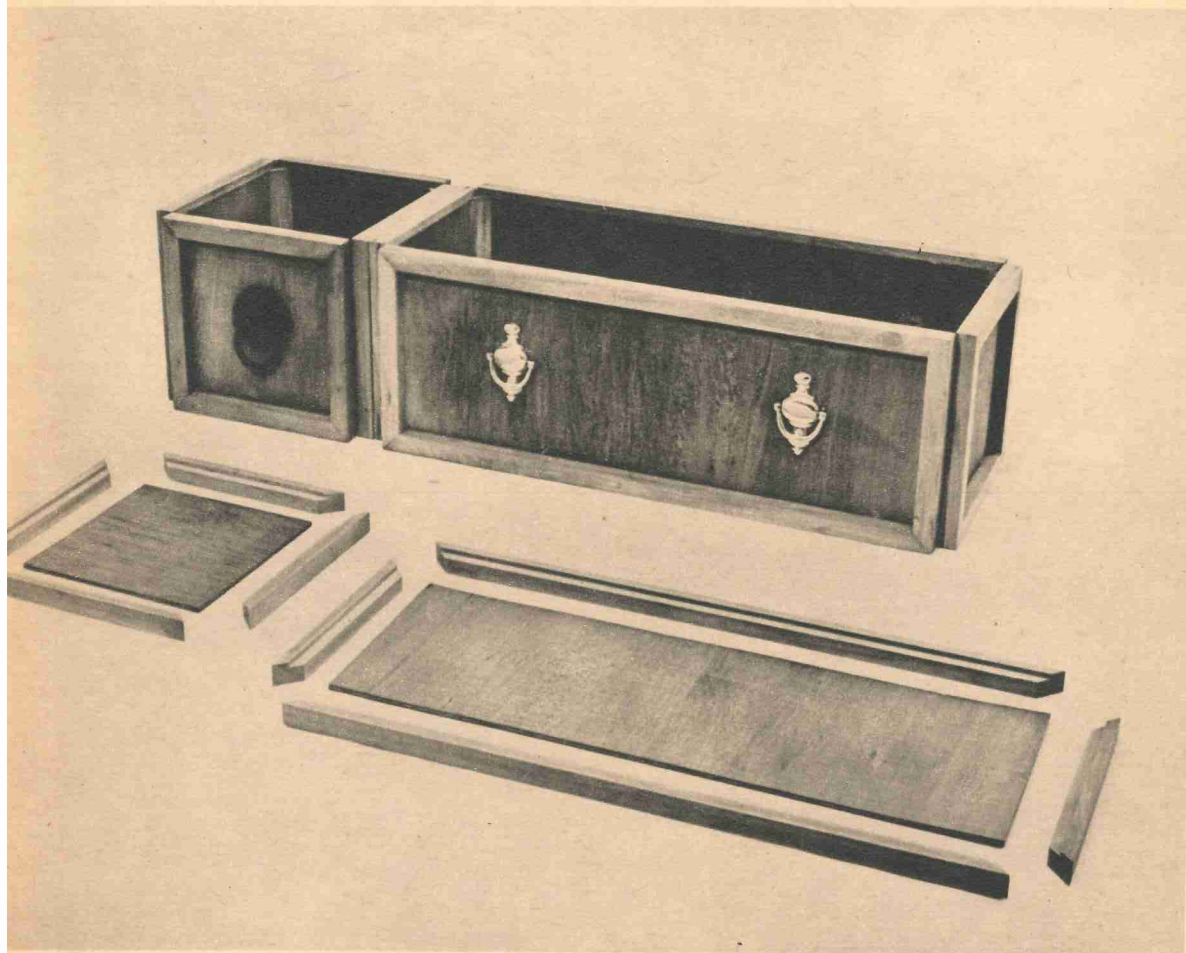
wood boards,  $1\frac{1}{2} \times 8 \times 17\frac{1}{4}$  in., glued together along their longest edge. (Since a planed eight-in. board is actually less than eight inches wide, the two boards glued together will be only about 15 in. wide as indicated in the drawing.)

When the glued edges are dry you'll have a piece  $17\frac{1}{4}$  in. high and about 15 in. wide. To cut the legs for two benches at once, nail four of these together and

shape them on the band saw or jig saw.

In putting the bench together follow the same procedure as used on the table. The side rails go first and are simply nailed to the side of the legs with two nails, with the legs set in five in. from the end. Note the angle-cut at each end of the side rails and the notch cut into the top corners of the legs for the side rails to fit into—and now for summer! •

# Redwood Planter Box



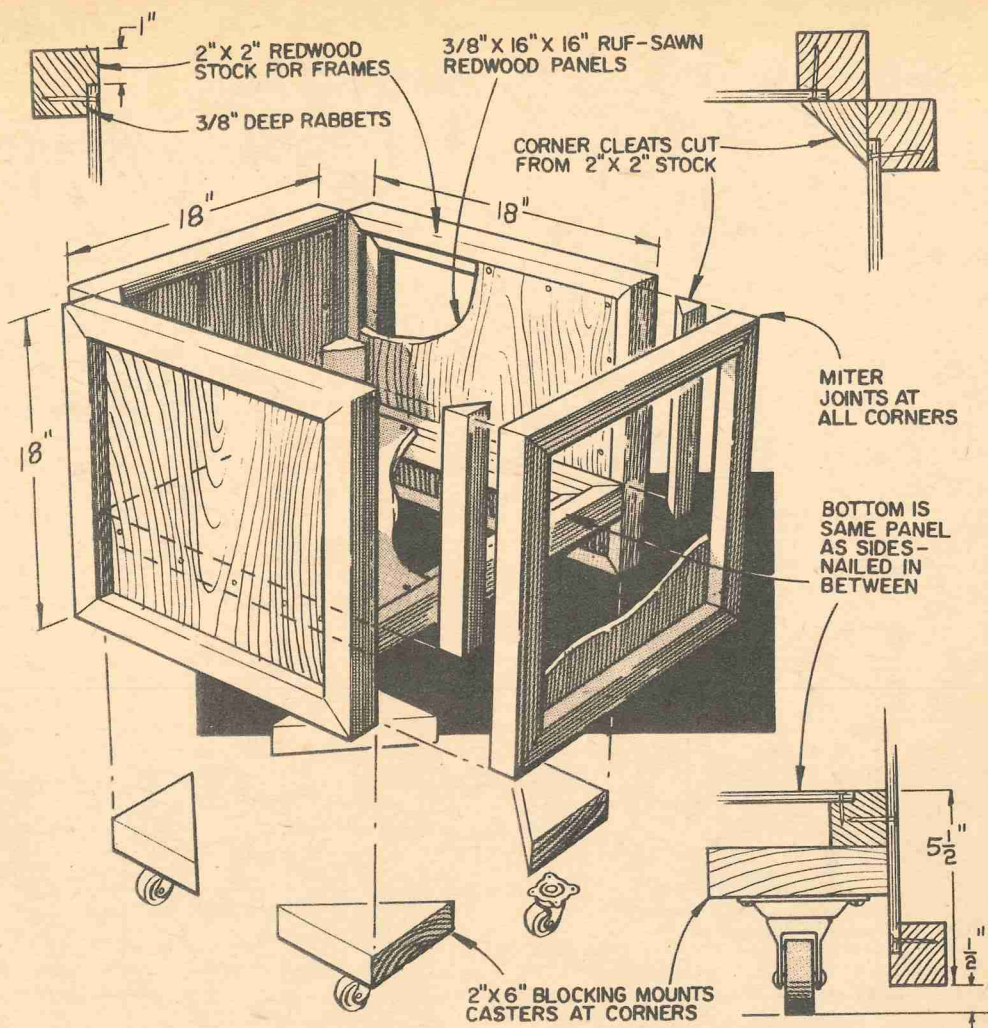
**BASIC BOX** is shown at left, but you can easily change size of planter to fit your needs.

**THIS ATTRACTIVE** planter box is based on a simple, modular design using both redwood lumber and redwood plywood. Ruf-sawn all-redwood plywood combines the strength, durability and economy of plywood with the warm, rich color and beautiful wood grain of redwood. The basic box shown assembled is 18"x18". Since all the parts are pre-cut at the lumber yard, you can easily change the size of the planter to fit your own needs. On a long patio wall you may wish to include a 2', 3' or 4' long planter and butt the planter boxes

together. For longer frame boxes, simply lengthen the side panels and the bottom. The end panels remain the same.

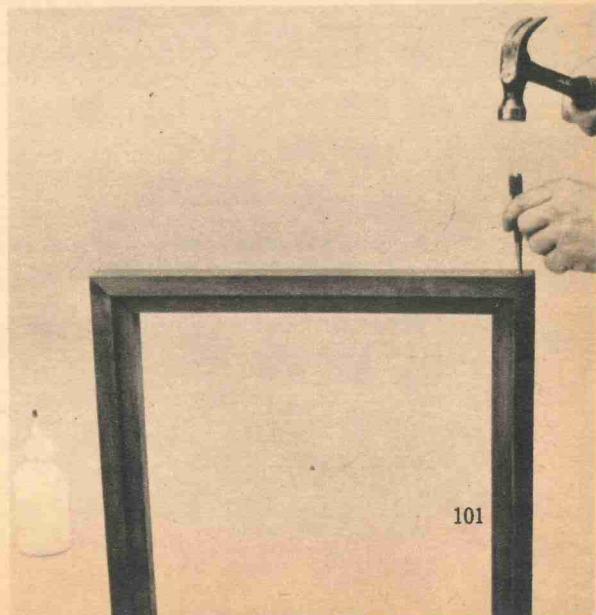
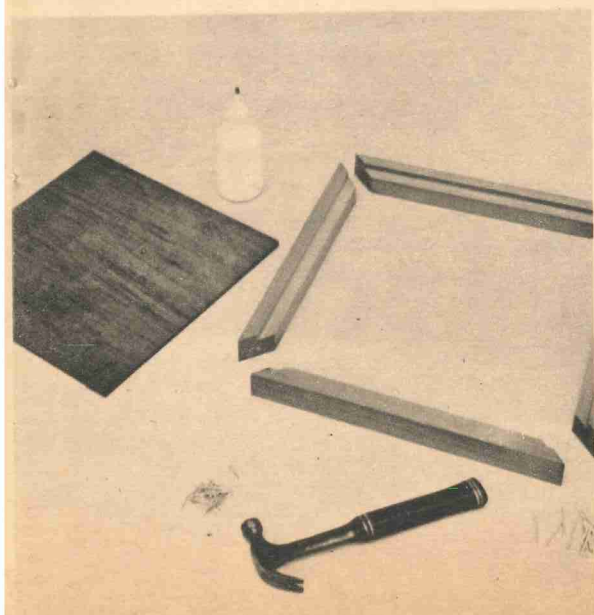
The sides and bottom of an 18"x18" planter box are made of five identical panels. The pre-cut materials required are: twenty pieces of 2"x2" Simpson Select Heart redwood, 18" long, with mitered ends for corner joint and  $\frac{3}{8}$ -inch-deep rabbets. Five pieces of 16"x16" Simpson  $\frac{3}{8}$ " Ruf-sawn all-redwood plywood. Eight pieces of corner cleats cut from 2"x2" stock to fit each corner at the top and bottom.

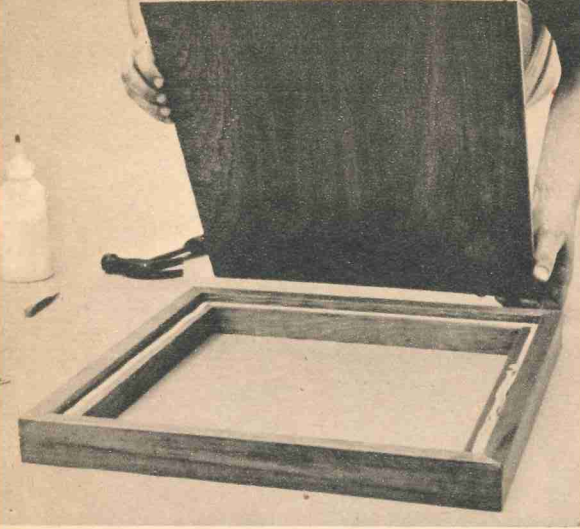




THE FOUR SIDES and bottom are identical. Cut all pieces to size, if not pre-cut by lumber dealer, and rabbet the basic frame.

AFTER THE CORNERS are glued (with exterior glue) the four corners are nailed with aluminum finishing nails, set, and puttied.





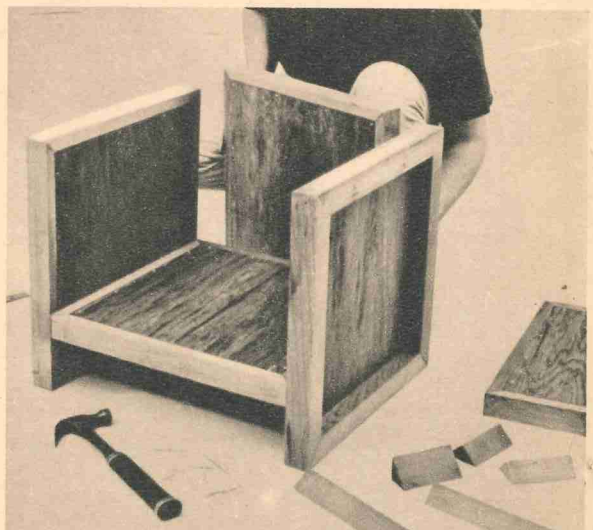
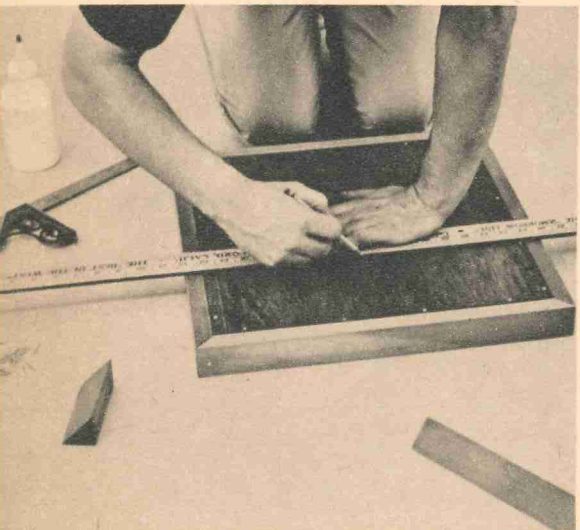
**THE SQUARE PANEL** of plywood is placed to fit in the frame. If corners are not perfectly square, the panel will make component true.



**THE ALL-REDWOOD** Ruf-sawn panel is nailed in place onto the redwood stock. Be sure that plywood "A" side faces out.

**AFTER FIVE PANELS** are assembled, scribe a line where the bottom is desired. This is helpful in aligning the sides for nailing.

**THE CRITICAL PART** in the assembly occurs after two sides are in place. Third side must be lined up carefully for squareness.



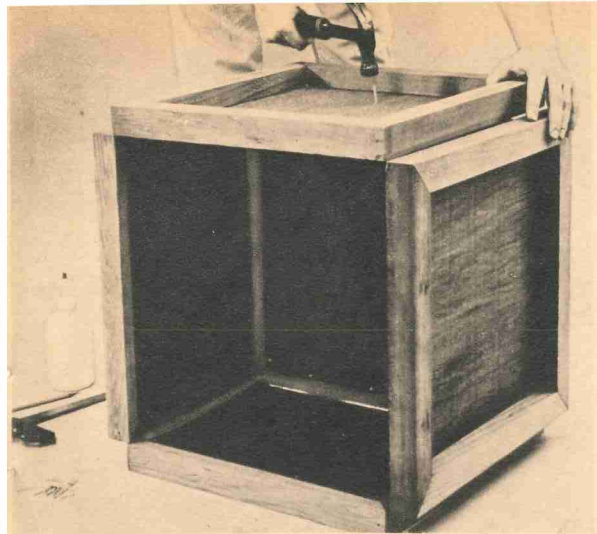
Use exterior waterproof glue besides 6d finishing and 5d common nails to assemble the parts together.

If you want the planter box to be movable, you will need, in addition, four swivel ball-bearing or wheel-type casters with two inches diameter wheels; four redwood triangular blocks 2"x6", cut to fit in corners, and sixteen 1½-inch RH screws.

This planter box can be built using a handsaw, hammer, square edge, nail set, miter box and a screwdriver if the lumber dealer furnishes 2"x2" rabbeted stock. Power tools naturally make any job easier and will be a must if you want to start from scratch with uncut lumber.

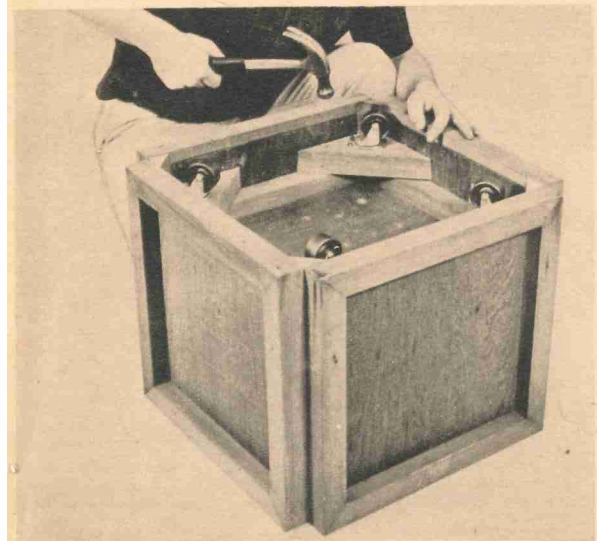
All nails and screws must be either galvanized; hot-dipped, zinc coated; aluminum or brass. All ornaments or





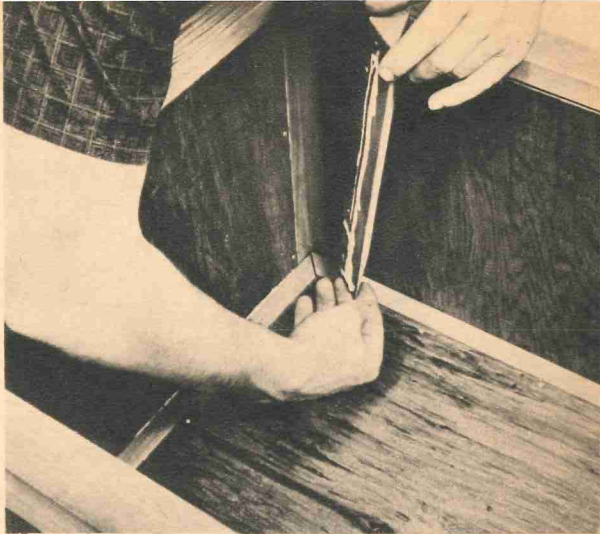
**FOURTH SIDE** is glued and nailed in place. In assembly, use only exterior glue that is waterproof, and nails that will resist rust.

**IF A MOVABLE** planter box is desired, individual swivel casters should be screwed on to 2"x6" wood blocks, cut to fit each corner.



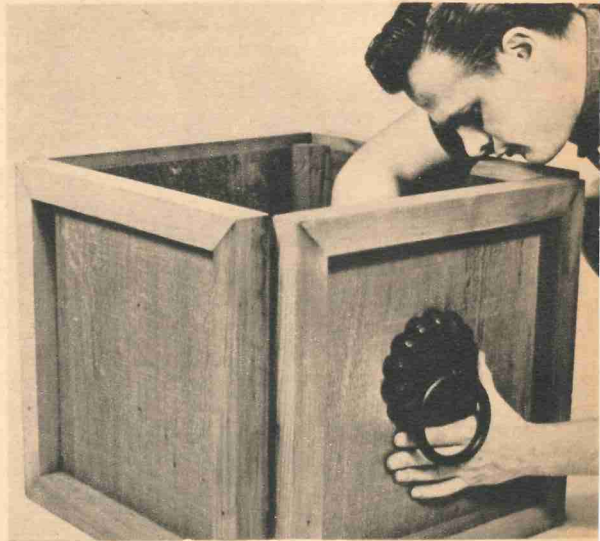
escutcheons and fittings must be manufactured for exterior use.

It is imperative that the redwood plywood panels be exterior type with a waterproof glue lamination and that it is all redwood including face, core and back. Some plywoods have only a face veneer of redwood with a Douglas fir back and these would necessitate additional protection waterproof coatings to



**TRIANGULAR** corner posts, that are cut from 2"x2" stock, are glued to each inside corner of the box, both on top and on bottom.

**RUSTPROOF** ornamental escutcheons may be mounted on one or more sides, and ornamental pull is helpful if planter is movable.



prevent seepage of water, and rotting.

Redwood can be painted, stained or left to weather gracefully in its natural state. Weathering gradually changes redwood from its reddish-brown color to a buckskin tan and eventually to a silver gray. A clear water repellent sealer will not alter the rich, natural grain and texture of redwood but will modify the effects of weathering. •

# ROLLING TV TABLE

By Robert Hoppough

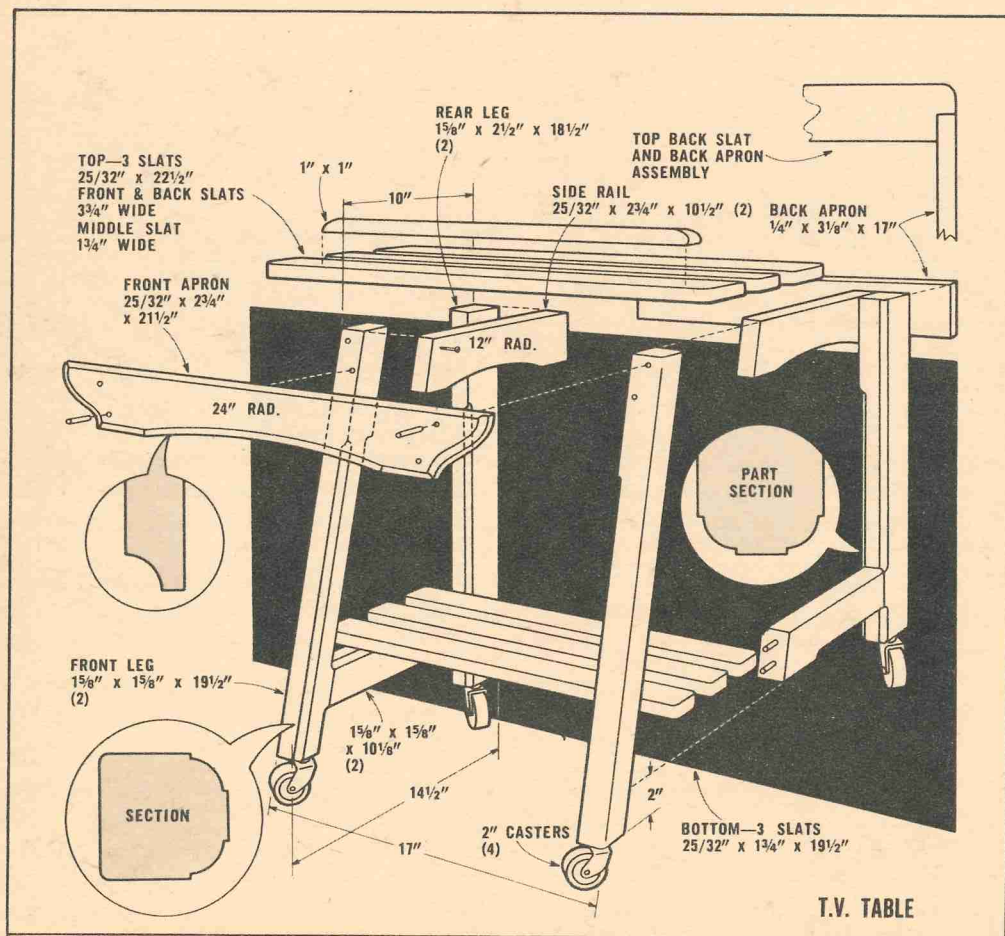
*This stylish stand enables you to move your set about with ease, gives you video almost anywhere you please.*

If your taste in television stands calls for something more distinctive than the standard, simulated-brass designs, you'll find that this rolling TV table can be adapted to a variety of decors by choice of finish—enamel, lacquer or wood stain—and touches of decorative hardware or gold striping.

You can use inexpensive building grades of pine for this project if you conceal the wood grain with an opaque finish. For a cherry, walnut or similar finish, the wood is more expensive and the selection more exacting.

Begin construction with the leg assemblies. To avoid problems later in trying to smooth inside corners, sand all pieces before joining.

The main strength of the stand will come from the glued joints. But be care-







ful not to smear glue where it will show through a varnish or stain finish.

To insure that the leg assemblies are identical, you could assemble one and clamp the other to it while joints are glued and fastenings secured.

The slats that form the top and shelf

can be fastened with screws concealed by plugs or with finishing nails that are countersunk and plugged with plastic wood.

Buy a good set of casters, at least two inches in diameter, and you can move the heaviest set about with ease. •



# END TABLE

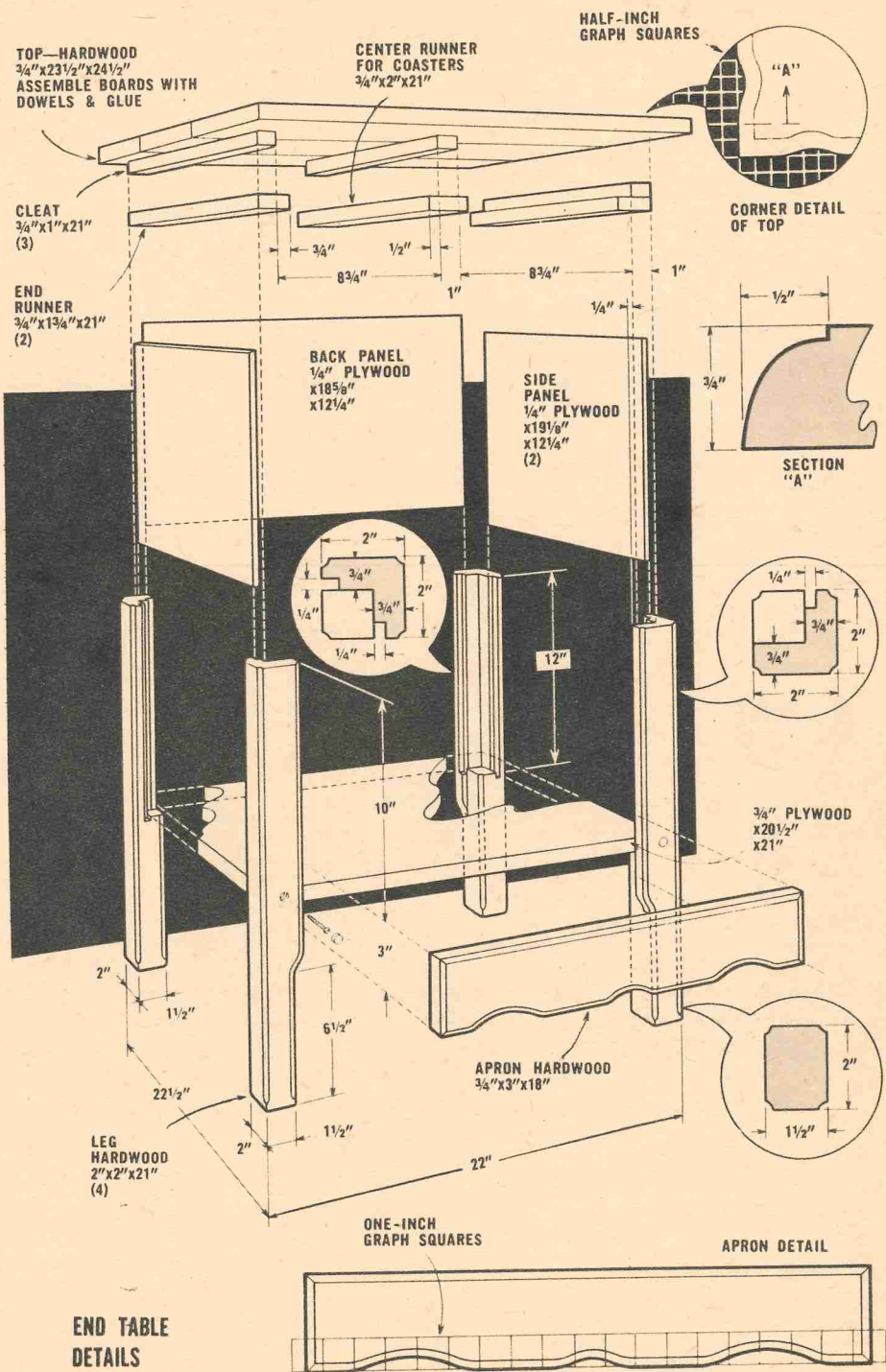
*Pull-out coaster shelves and lots of storage space are among the pluses offered by this handsome unit.*

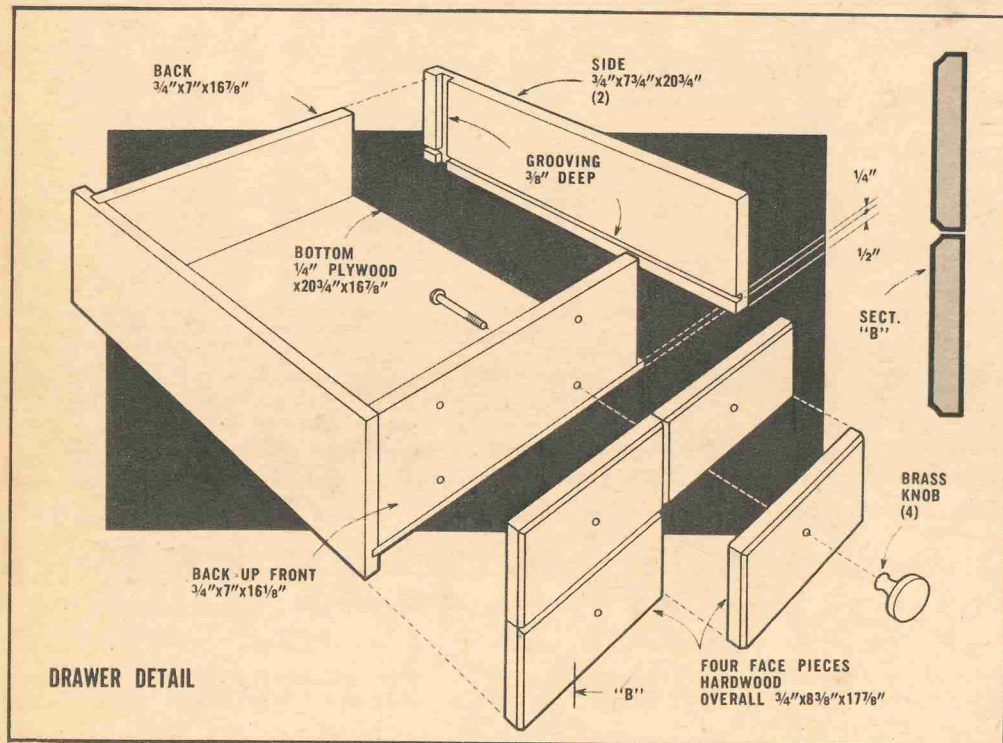
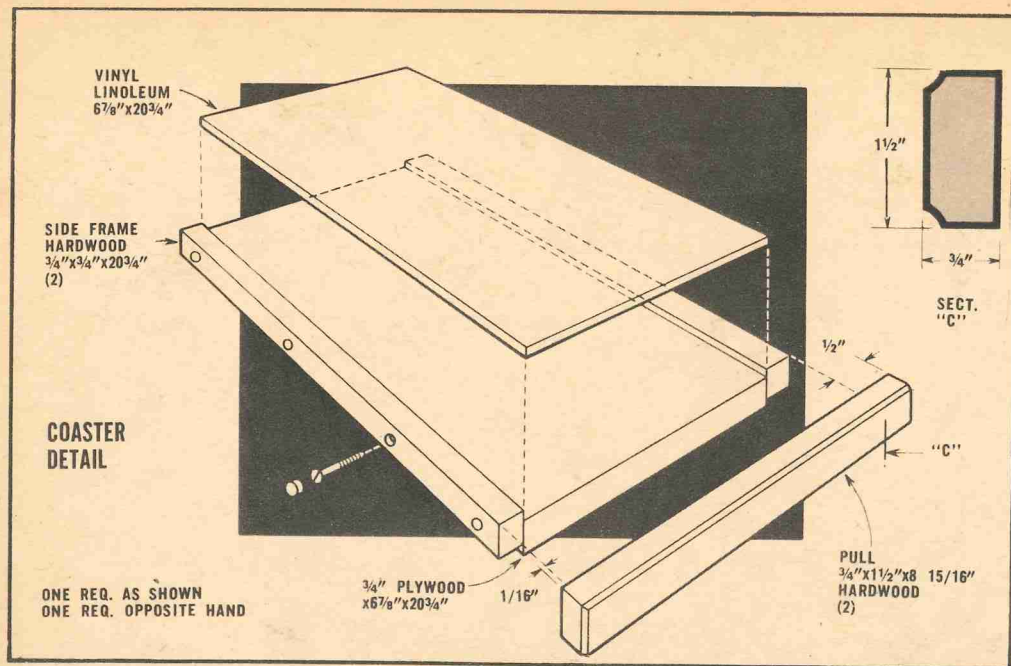
**O**UR end table is unusual for several reasons. It's a beautiful piece of furniture, it's extremely useful, and it's easy to build. You begin with the top assembly. The glue can be curing while you cut out the other com-

ponents. You'll probably want to use one-inch hardwood for the top, so the number of glued joints will depend on the width of the stock. Select the pieces for appearance and minimum warpage.

A pair of bar clamps will prove







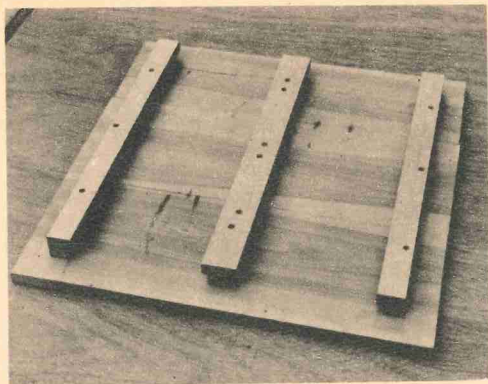
helpful in drawing the top together while the cross braces (coaster slide members) are attached and the glue sets.

Since two-inch hardwood stock to match the top may be hard to get, the legs are made from glued-up one-inch

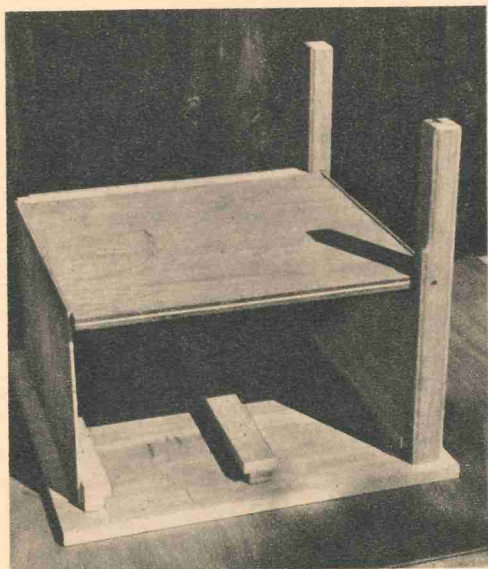
stock. Each segment of the leg is shaped before gluing, except for the decorative routing and sanding.

The mock drawer fronts are most easily routed and finish-sanded before being attached to the plywood back-up





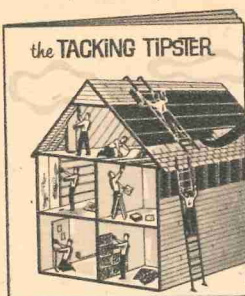
**COASTER** slides double as cross braces, should be screw-attached as top is glued.



**LEGS** are attached to plywood bottom, at each corner of top by countersunk screws.

piece. For ease in operation, the drawer can be equipped with nylon roller guides and made to slide on metal rails fitted beneath the drawer.

Fill all exposed screw holes in the top and legs with wood plugs. Done properly, this can add to the table's appearance, particularly if a distressed finish is planned. • —Robert Hoppough

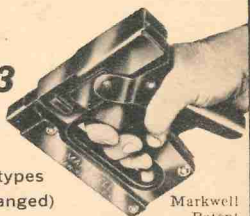


**Free!**  
Helpful hints  
on home  
improvements

Handy booklet illustrates and describes how to install ceiling tile, insulate your home, upholster, weatherstrip and do many other projects.

Write **Markwell Mfg. Co., Inc.**  
Dept. 3407, 424 West 33rd Street, New York 1, N.Y.  
(Quality Tacking Tools Since 1919)

the famous  
**Markwell® L3**  
**'BLUE TACKER'**



Uses 12 different sizes and types  
of staples (instantly interchanged)  
for every indoor or outdoor tacking job.

Markwell  
Patent  
2,265,361

## The How-to Book of CARPENTRY

Tips to give  
your home  
projects  
a real

**"professional" look**



- Furniture • Cabinetry • Framing •
- Paneling • Built-ins •

**& Hand and Power Tools You Should Own**

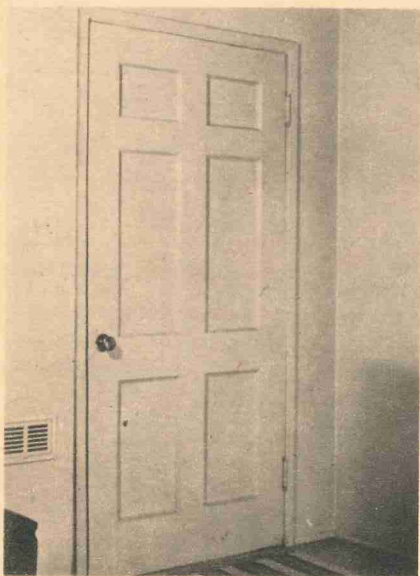
FB#549 THE HOW-TO BOOK OF CARPENTRY—75¢  
On sale now at your favorite newsstand, or order  
direct from Fawcett Publications, Inc., Greenwich,  
Conn. Include 10¢ for postage and handling. No  
Canadian orders.

# Customize your Door

BY ROBERT WORTHAM

**D**RAMATIZE your exterior and interior doors by adding panels and stock moldings. Used with imagination, molding can be more than a finishing touch. Of rich but simple design, the entrance door pictured on these pages has a Spanish flair that is compatible with modern or traditional homes. And it's all done with inexpensive materials.

The door customized here—at a cost of less than \$6—was a standard six-panel entry type. The rich, raised effect was achieved by adding block panels to the existing



ALMOST any door can be dramatized by adding panels and stock moldings.

panels. These blocks ( $4\frac{3}{4} \times 8$  in.) were cut from  $\frac{3}{4}$ -in. pine and then edged with half-inch cove molding. Three-quarter-inch clover-leaf molding was used for the design on the face of each block. Glue and small brads hold the molding on the blocks and the blocks on the door.

After the block panels were installed, the door was striped with clover-leaf molding about a quarter of an inch in from each edge. The original panels also were outlined with molding.

As was done here, you may find it desirable to relocate the door knob for esthetical or practical reasons. This should be taken care of *before* you begin applying panels and molding. Depending on the effect desired, investment in more appropriate hardware may be in order.



BASIC raised block panels are made of pine and edged with cove molding.



## MODERN, CONTEMPORARY OR TRADITIONAL EFFECTS CAN BE ACHIEVED BY ADDING PANELS AND STOCK MOLDINGS.

Slab or flush doors can be treated in much the same way. Accent panels can be cut from half-inch sheet cork and glued to the door and varnished. Other striking effects can be achieved with carved trim, molded wood carvings and plaques.

When installation is completed, the surface can be painted, stained or antiqued.

The apparent size of a door can be altered by the choice and spacing of molding: a narrow door can be made to seem wider by stressing horizontal lines; to achieve height, stress vertical lines.

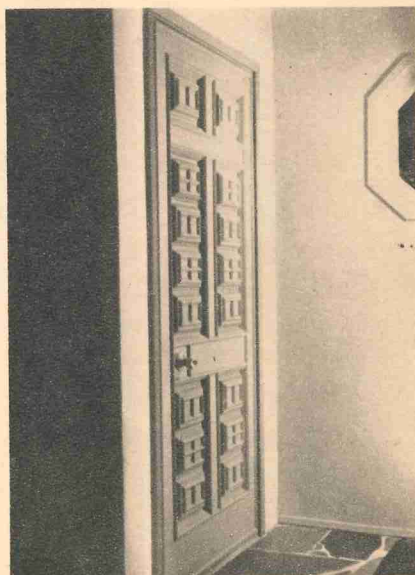
A good way to begin a customizing job is to plan your door to scale on paper. Try a rich Renaissance effect, if it will go with your decor—or a modern design with complementary squares in bright, contrasting colors. The drawings

on the following page should give you a good idea of the limitless design possibilities of different combinations of panels and moldings.

Go to a hardware store or lumber dealer and look over the moldings available. Most dealers have a display board showing the more popular varieties—including half-round, quarter-round, cove, ogee, clover leaf, scoop, fluted and other familiar shapes in several different sizes. A shop that specializes in picture framing also can provide you with some interesting moldings. Of course, if you have a shaper in your workshop you can cut moldings of your own design.



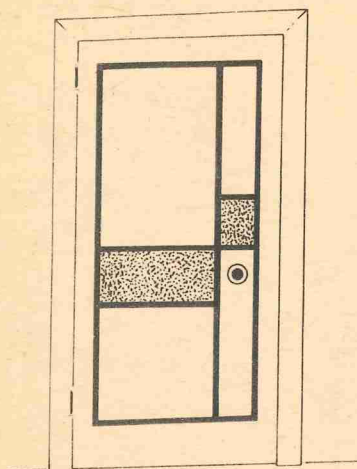
ASSEMBLED block panels are fastened to the door with glue and small brads.



COMPLETED door can be antiqued or stained to look like a museum piece.

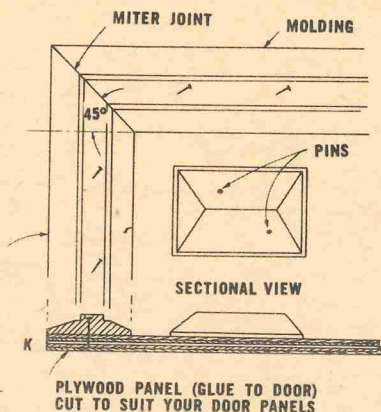
# Customize your Door

MODERN DOOR

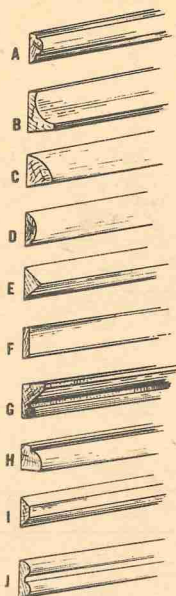


DETAIL OF PANEL FOR SPANISH DOOR

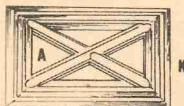
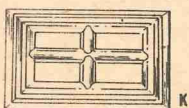
(GLUE AND NAIL MOLDINGS TO PLYWOOD PANEL)



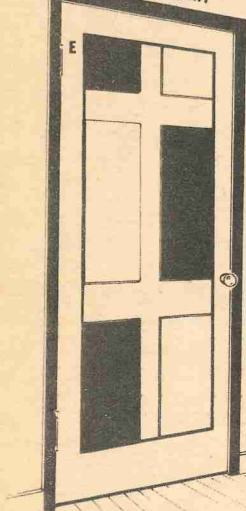
VARIOUS MOLDINGS SUITABLE FOR THE JOB



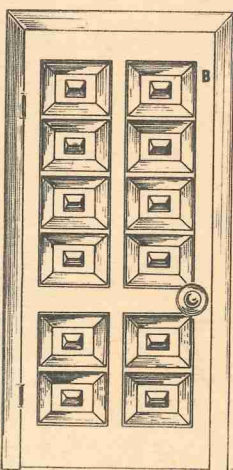
2 OTHER PANEL IDEAS



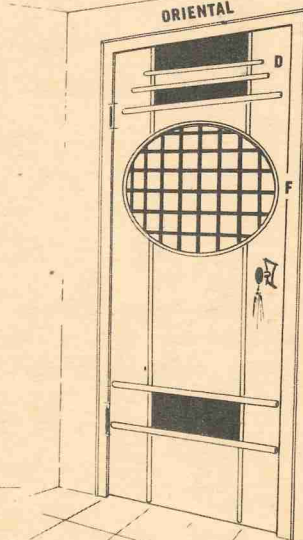
CONTEMPORARY



SPANISH DOOR



ORIENTAL



The same customizing techniques used on doors can be employed to dress up chests, cabinets, bookcases and other pieces of wooden furniture with broad flat surfaces. Kitchen cabinets that lack

the custom touch can be made to look like museum pieces. A battered chest that has been relegated to the attic or store room can be dressed up to look like the family's most prized heirloom. •



**MADE IN U.S.A.**

for Lifetime Service  
and Performance

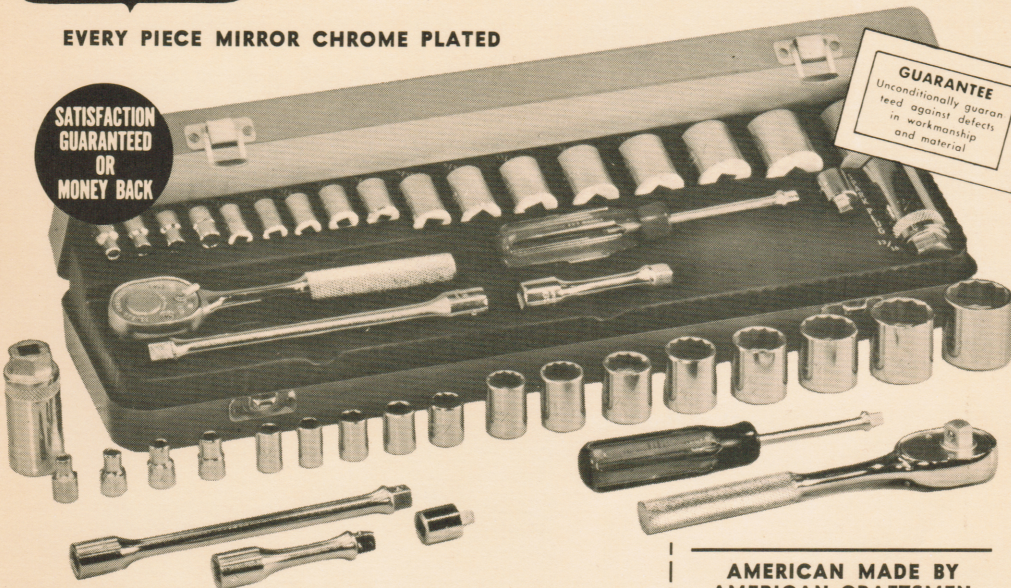
# Buy Quality with Confidence—Compare!

## SOCKET WRENCH OUTFIT COMBINATION (2 Sets in 1) 1/4"-3/8" SQUARE DRIVE

EVERY PIECE MIRROR CHROME PLATED

**SATISFACTION  
GUARANTEED  
OR  
MONEY BACK**

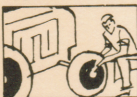
**GUARANTEE**  
Unconditionally guaran-  
teed against defects  
in workmanship  
and material



FOR CAR REPAIR



FOR HOME USE



FOR THE FARM

### MADE AND GUARANTEED BY THE WORLD'S LARGEST MANUFACTURER OF MECHANICS HAND TOOLS

Sizes range to 1-inch. Two sets in one promote a wide range of work. Will handle all nut and bolt sizes from 3/16" to 1". For radio, television, appliances, automobiles, motor boats, lawn mowers, farm maintenance, and thousands of other uses. Mirror-chromed steel sockets and attachments precision hardened for extra strength. Spark plug socket is neoprene lined to prevent plug cracking and dropping.

All fully guaranteed against defects in material and workmanship

**FILL IN COUPON AND MAIL TODAY!**

AMERICAN MADE BY  
AMERICAN CRAFTSMEN

## ONLY \$15.95

Including custom-fitted steel Tool Box  
If Each Piece Purchased Individually You Would Pay \$26.22!

COMPLETE 24-PC. OUTFIT CONTAINS	
1/4" DRIVE ITEMS	6" Extension
Nine 6 point sockets	Reversible Ratchet
3/16" to 1/2" Spinner Handle	3/8" DRIVE Socket
3/8" DRIVE ITEMS	Spark Plug Adaptor
Eight 12 point sockets	3/8" to 1/4" Fitted Steel Tool Box
9/16" to 1" 3" Extension	

HAMILTON HOUSE, DEPT. 13-594, COS COB, CONN. 06807

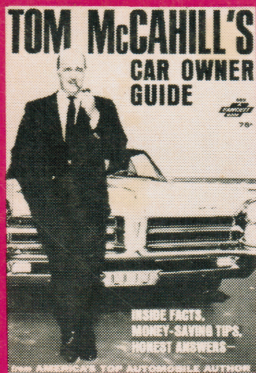
I am enclosing \$15.95. Please send a complete 24-piece Socket Wrench Outfit and be sure to include the Custom-Fitted Steel Tool Box. It is understood that I must be completely satisfied or I will obtain an immediate refund. Enclosed find \$ .....

NAME .....

ADDRESS .....

CITY .....STATE .....ZIP .....





**TOM McCAHILL'S CAR OWNER GUIDE** • Inside facts and driving tips from the top car author. (No. 589)

**HANDY MAN'S HOME MANUAL** • Cut repair, remodeling, maintenance costs; furniture refinishing. (No. 588)

**TODAY'S WOMAN SEWING SIMPLIFIED**. Sew like a pro! New shortcuts and methods make it easy. (No. 586)

**TODAY'S WOMAN BOOK FOR BRIDES**. A complete wedding guide. Fashions! Etiquette! Tradition! (No. 585)

**HOW TO WIN AT WEEKEND GOLF** • Golf pro Julius Boros with advice, how-to photographs. (No. 584)

**THE BOOK OF MOTORCYCLES, TRAIL BIKES & SCOOTERS** • For fun, racing; new models. (No. 583)

**HOME ELECTRICAL REPAIRS HANDBOOK** • Fix bells, wires and lights; install switches and outlets. (No. 582)

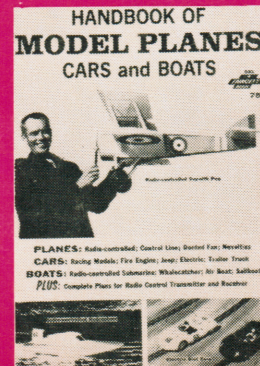
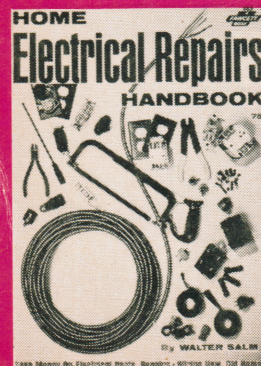
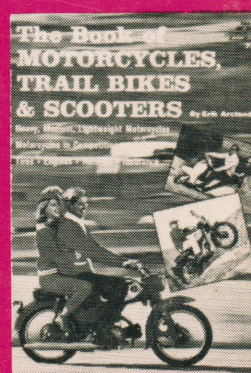
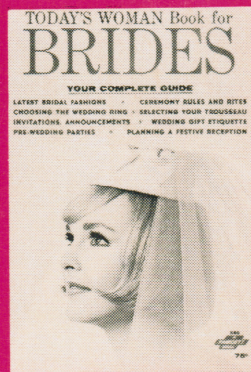
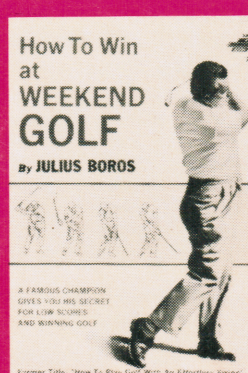
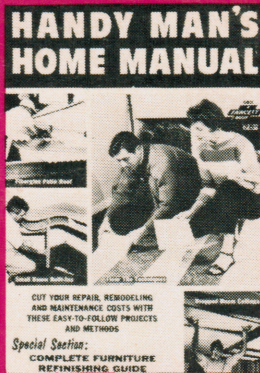
**HANDBOOK OF MODEL PLANES, CARS, BOATS** • Plans, features; slot cars; radio control, etc. (No. 581)

**TODAY'S WOMAN COOK BOOK** • A basic cook book with over 185 easy-to-follow, all new recipes. (No. 580)

**AXELROD'S TROPICAL FISH BOOK** • How to start; setting up; plants; photos of over 180 fishes. (No. 579)

**COIN WORLD GUIDE TO COINS** • North American coins, medals, tokens; history and prices. (No. 578)

**ANTIQUE GUNS FROM THE STAGECOACH COLLECTION** • Over 300 rare firearm photos. (No. 577)



# BUILD YOUR HOW-TO-DO-IT LIBRARY

With Fawcett Books

**HOW TO BUILD 20 BOATS** • Runabouts, cruisers, sailboats, houseboats, prams, kayak, aqua-kart. (No. 576)

**THE HOW-TO BOOK OF ATTIC AND BASEMENT REMODELING** • Planning, materials, built-ins. (No. 575)

**HOUSE & GARDEN DECORATING BOOK** • Styles, colors, windows, walls, fabrics, patios, storage. (No. 574)

**TV REPAIRS YOU CAN DO** • Buying picture tubes, sound troubles, new antennas, color television. (No. 573)

**NEW HAIR STYLE IDEAS** • 50 teen coifs; styles for straight, curly, long, short hair; wigs; color. (No. 572)

**At leading newsstands, drugstores, supermarkets — wherever magazines are sold**

To order, send 75¢ per copy to: FAWCETT BOOKS, Greenwich, Conn. 06830  
Add 10¢ per copy mailing charge. Specify each book by title and number.